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研究紀要

Class Identification in Taiwan: A Latent Class Analysis

(台灣社會的階級認同：潛在類別分析)*

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Abstract

This paper uses latent class analysis to discuss three measures of class identification from the 1997 Taiwan Social Change Survey. The three measures differ in terms of number of offered class labels and the presence of a “working class” selection. The data indicate that the latent structure of subjective class identification is comprised of five subjective classes and a category of people with no clear class awareness. The five subjective classes are latent upper-middle class, latent middle class, latent lower-middle class, latent working class, and latent lower class. Different labor market and workplace experiences, objective classes, and status positions tend to generate different perceptions between men and women regarding social class positions. The findings suggest that a “working class” category should be included in surveys meant to measure subjective class identification, since it has strong connotations of current labor market participation and associations with skilled/unskilled laborers and service workers.

Keywords: Class identification, latent class analysis

中文摘要

本研究以潛在類別分析方法來瞭解台灣社會的階級認同結構。分析資料來自 1997 年「台灣社會變遷基本調查」三個以不同方式詢問階級認同的題項。這三個題項除了可供選擇的階級類別不同外，其中一題沒有「勞工階級」的答項。研究結果發現台灣的階級認同結構包括六個潛在階級認同類別。其中五個類別可分別命名為：潛在中上、潛在中層、潛在中下、潛在工人，以及潛在下層等階級。第六個潛在類別則與無清楚階級認同意識者有關。

由於在勞力市場及工作場所的不同經驗，男性與女性受訪者的潛在階級認同結構有所不同。客觀階級及身份位置對於男性與女性的階級認同，也有不同的影響力。依據研究發現，本研究建議設計主觀階級認同的題項，應該提供「勞工階級」的答項供受訪者選擇。勞工階級的認同者主要為目前正參與勞力市場，且其職業技術層級為非技術工、技術工與服務工作人員。

關鍵詞：階級認同、潛在類別分析

Introduction

For decades, quantitative researchers interested in issues related to subjective class identification have been concerned about how class identification should be measured in the survey context. This research interest is inspired by Karl Marx's vision of growing proletariat awareness of its exploited position in a capitalist society, and the resulting formation of a collective identity that leads to revolutionary action (Marx and Engels 1947, 1959). Richard Centers (1949), in his effort to demonstrate such awareness, added a response category "working class" between "middle class" and "lower class" in his survey of American white males and found that slightly more than half of his sample would identify as "working class." He noticed that the portion identified as middle class in his study was only half of that reported by an earlier Fortune magazine survey, which did not include "working class" as a choice. Centers' further analysis showed that the working class identifiers tended to be factory workers and laborers and also tended to be more radical in their political views. Centers therefore viewed the prominent difference between the results as a clear manifestation of class interest.

Centers' approach raised several methodological and substantive issues. The foremost methodological question is how to conceptualize and measure subjective class identification in survey research. The answer to this primary question is intertwined with at least two substantive issues: (a) What is the relationship between objective class positions and subjective class identification? The question addresses the theoretical significance of the study

of subjective class identification. (b) Do men and women differ in their bases for deciding class identification? This issue explores further the relationship between gendered experiences of participation in the labor force and class identification.

The present research seeks to detect the underlying structure from different measures of class identification offered by Taiwan Social Change Survey (TSCS, thereafter) in 1997 (Chiu 1998). In addition, this paper investigates the relationship between the discovered latent structures of subjective class identification and men's and women's objective class positions.

Literature Review

Substantive Issues

A. Objective Class Position and Subjective Class Identification

Early critics adhering to the pluralist perspective have long since dismissed the salience of social classes. They argued that the class structure in an advanced industrial society is but one of multiple and intersecting social hierarchies competing for an individual's identity. The increased prospect of upward mobility also reduced the likeliness of clear and strong class identification and interest as envisioned by Marxists (e.g., Lipset and Bendix 1959; Nisbet 1959). The most recent and most radical detractors assert that the significance of social class and class consciousness is only a historical phenomenon, and announced the death of class in the age of postmoderni-

zation and globalization (Pakulski and Waters 1996). These critics would see any serious attempt to measure class identification as futile.

Defenders from both Weberian and Marxist traditions, however, believe that the announcement of the death of class was premature. They are eager to demonstrate the importance of the class structure and its impact on class identification. They, however, have moved away from the view that the objective class structure is just composed by two oppositional social classes. Jackman and Jackman (1983), for instance, argue that social classes are rather more like rank-ordered status groups and separated only by loosely recognizable boundaries. They find moderate relationships in the U. S. between class identification and graded status variables, such as occupational prestige, education, and income. British sociologists, employing John Goldthorpe's class scheme, which adheres closely to the Weberian approach (see Erikson and Goldthorpe 1992), have also demonstrated that distinct objective class positions have a consistent relationship with subjective class identification (e.g., Marshall et al. 1988; Evans and Mills 1998).

From a more explicit Marxist approach, Vanneman and Cannon (1987) maintain that, even in the U.S. where there is no strong socialist tradition, workers do clearly perceive a discrete class structure and their place in it. Their study, however, finds that the determining factors of class identification include not only variables related to Marxist conceptions of class, such as mental labor, self-employment, and job authority, but also status-related variables such as education and income (see also Vanneman and Pampel 1977). Wright (1985), using criteria related to the ownership of means of production, organizational control, and level of skills to construct a set of

twelve social classes, also finds a direct relationship between class structure and class self-identification in the U.S. and Sweden (see also Wright and Shin 1988).

In short, defenders of Centers' social psychological approach conclude that, despite the different ways of conceptualizing and measuring objective and subjective classes, responses to survey questions on class identification that offer the choice of "working class" reflect meaningfully the mental image of a small number of bounded groups hierarchically located in a society. Moreover, they find that subjective class identification correlates moderately to various measures of objective class positions. The findings that class identification has a consistent relationship with status variables, such as education and income, can also be justified by the theoretical view that people situated in different locations of a social hierarchy have different ways of evaluating their relative standings (Daherndorf 1959; Ossoswsk 1963). The justification in turn supports Centers' strategy of mixing rank-ordered labels with a categorical label "working class" in the same survey question (see also Vanneman and Pampel 1977).

B. Gender Difference

It is necessary to point out that previous studies have found significant gender differences concerning the strength or the pattern of the relationship between class identification and objective class or status positions. Women's increasing level of education and participation in the labor force has prompted researchers to debate the extent to which subjective class identification among married women is affected by the spouse's class position. Davis and Robinson (1988) propose that wives and husbands might borrow, share, or

ignore their spouse's socioeconomic characteristics in deciding their own subjective class. Empirical studies up to this time are inconclusive as to which model can best explain married men's or women's class identification (e.g., Davis and Robinson 1988, 1998; Jackman and Jackman 1983; Yamaguchi and Wang 2002).

Men and women also use different work related criteria to determine class identification (Simpson et al., 1988). Moreover, Simpson and Mutran (1981) find that white-collar working women tend to degrade their subjective class placements by identifying with the working class. Blue-collar housewives, on the other hand, tend to enhance their class membership by identifying with the middle class. They attribute this tendency of "false consciousness" to the premise that working women disproportionately find jobs in the secondary labor market, and housewives see that a woman's place is in the home and being a full-time housewife enhances the husband's status.

Methodological Issues

Methodological issues concerning the measurement of class identification are closely related to the substantive conceptions about what constitutes class structure, how many classes there are, and whether this class structure is a significant basis of collective identity. Richard Centers' (1949) addition of "working class," for example, is an attempt to go beyond the idea that a class structure is constituted only of logically ranked strata that do not capture the distinct feeling of solidarity and collective interests of those working mainly in manual occupations. His assumption and approach,

however, are challenged by those skeptical about the significance of objective class positions in shaping a person's self-identity. Later studies show that the open- or closed-ended format of the question on class identification, and the number of class labels given in the question, would affect the distribution of responses (see Kluegel and Smith 1981 for a review of the debate before 1980).

Studies of class identification in Taiwan have encountered similar methodological problems. For instance, Wu (1994) finds that, given the fixed response categories "upper-middle class," "middle class," and "working class" to choose from, about 44% identify themselves as middle class and 47% identify as working class. Marsh (2002), analyzing the 1992 TSCS, in which the question of class identification has six categories, finds 41% choosing "middle class" and 29% choosing "working class." This difference in percentages of working-class identifiers undoubtedly can be attributed to different measurement schemes.

What then is the best approach for measuring class identification in a survey? Ideally, one may want to use many survey questions to tackle this problem (e.g., Lopreato and Hazelrigg 1972). In a less ideal but more realistic survey situation, one could use at least one closed-ended question asking about the awareness of the existence of classes and a few questions that offer different choices and cover a range of possible conceptions of class stratification. One of such questions should treat class stratification like status stratification, with only rank-ordered class labels and without the label "working class." At the other extreme, there should be one that has a few choices with labels tailored to the Marxist conception. Still another question

should be more like Centers' strategy, mixing both ordered class labels with the label "working class." With this design and proper analysis, it is possible to determine if the perception and identification of social classes are influenced randomly by different survey questions or determined by an underlying structure. Such an analysis may also clarify if the inclusion of the "working class" as a choice is sound and identify the meaning of such a choice. With that design in mind, the 1997 TSCS asked three different questions about class identification, providing the rare opportunity to examine this underlying structure of class identification in Taiwan (Chiu 1998).

Research Hypotheses

In light of the above literature review, the present research proposes the following research hypotheses:

- H1: Despite different response patterns elicited by the three survey questions, people have a fairly consistent view about their class membership and, hence, a latent structure of class identification could be uncovered.
- H1a: Such latent structure of class identification would differ by gender.
- H2: In light of the complexity of the modern occupational structure, the latent structure would be composed by a mixture of the perception of ordered status groups and a distinct class position such as "working class."
- H3: The latent subjective classes are related to variables associated with the

respondents' individual socioeconomic status as well as objective class positions. For married respondents, it would also be related to the spouse's job characteristics.

H3a: The above relationship, however, would differ between men and women.

Data and Measurement

The data of 1997 TSCS is a multistage stratified probability sample of the adult population in Taiwan (Chiu 1998). For the present research, the sample includes only those who are either married or never married. The resultant sample size before deletions due to missing values is 2,405.

TSCS in 1997 asks respondents to identify their class membership in three differently framed questions. The first question offers respondents five choices by asking, "If people in our society are divided into upper, upper middle, middle, lower middle, and lower class, which class do you think you belong to?" The second question offers respondents three response categories: capitalist class, middle class, and working class. The third question is similar to the first, differing only by the addition of the label "working class" as a choice, placed after the label "lower middle class." Respondents are given the chance to indicate that they do not know, they are not sure, or they do not understand the meaning of the question.

The present work utilizes job characteristics included in the dataset as an indirect measure of objective class positions. Variables related to respondent's objective class position are employment status, level of occupational skill,

and level of job authority. Categories of respondent's employment status include self-employed, employer, employee, working for a family business, unemployed, retired, and homemaker. These dummy coded categories include criteria related to Wright's class scheme, such as ownership of the means of production and ownership of organizational assets.

Respondent's level of occupational skill comprises five levels. These include, from the highest to the lowest, administrators and professionals, semi-professional, clerical workers, service workers, skilled laborers, and unskilled laborers. The creation of this variable is based on Taiwan's official standard classification of occupations (Huang 1999). It is also similar to Goldthorpe's class scheme. In the analysis of the relationship between objective class position and subjective class identification, this variable is coded as four dummy variables with clerical workers as the reference category. There are three levels of job authority, depending on whether the respondent supervises or is supervised.

Respondents' own socioeconomic status include education (six levels ranging from elementary schooling to graduate degrees) and their monthly family income (entered as natural logarithm of family income measured in thousands of NT dollars). Age and marital status are also included in the analyses.

In order to examine the effects of spouse's objective class positions and socioeconomic status without excluding respondents who are not married from further regression analyses, some adjustments are made in the operationalization of spouse's employment status and educational level. For married respondents, spouse's employment status is dummy coded into four

categories: self-employed, employer, employee, and not employed which includes unemployed, retired, and homemakers. Since spouses who are not employed do not participate in the labor market and their employment status is assumed to have no formal contribution to respondents' class identification, they are combined with singles to become the reference category of the spouse's employment status. To explore the effect of spouse's educational level, three spouse's educational levels are created: middle school or below, high school, and college and above. Spouses who have no formal education are combined with singles to become the reference category.

Methods

The principal task of this paper is to discover the latent structure of responses to three survey questions on class identification by means of latent class analysis (LCA). The basic idea of LCA is similar to that of factor analysis, except that a set of categorical variables is treated as indicators of latent categorical variables (McCutcheon 1987; Magidson and Vermunt 2002). The present research used Latent GOLD 3.0 (Vermunt and Magidson 2003).

The general probability structure of latent class models handled by Latent GOLD 3.0 is of the form (Vermunt and Magidson 2005: 2-3):

$$f(y|z) = \sum_x \pi(x|z) f(y|x, z) = \sum_x \pi(x|z) \prod_{m=1}^M f(y_m|x, z)$$

The middle expression shows that the unobserved variables x intervene

between a set of covariates z and indicators y . $\pi(x|z)$ is the probability of having a certain set of values of the latent variables x , given an individual's covariate z values. $f(y|x, z)$ is the probability density of y for given x and z . The middle expression therefore implies that unobserved x variables may be influenced by z variables and that y variables may, in turn, be influenced by both latent variables x and observed z covariates. The last part of the equation, $\prod_{m=1}^M f(y_m | x, z)$, implies that different subsets of y variables, y_m , are assumed to be mutually independent given the latent variables and the covariates. The classical latent class analysis (Lazarsfeld and Henry 1968) with K categorical y variables (*i.e.*, y_1, y_2, \dots, y^k) assumes $M = K$ and $m = k$.

The interpretation of LCA results relies mainly upon model statistics indicating the overall goodness of fit of a specified LCA model and upon conditional probabilities associating each category of the latent variable with every category of an indicator. Conditional probabilities are useful in examining differences in the latent structure of class identification as between males and females. The software also produces posterior class membership probabilities, which can be used to classify each observed case to a latent category, and offers statistics indicating classification errors.

The present research uses all response categories provided by the three survey questions on class identification, including “don't know,” “not sure,” and “don't understand” to perform the LCA. Only cases with missing values are excluded. In order to determine if the latent structure of class identification is different for men and women, the analytical plan is to analyze the whole sample ($N = 2,405$) first with gender as the covariate, and

then to compare the result of this latent class analysis with two results obtained by analyzing separately men's sample ($N = 1,218$) and women's sample ($N = 1,187$). After determining the best-fit latent structure model for the whole sample, the difference between the likelihood ratio chi-squared statistic L^2 obtained by the analysis of the whole sample, and the sum of the two L^2 values from application of the same model to the men's and women's subsamples, would indicate whether the two genders were completely homogenous, partially homogenous, or completely heterogeneous in their latent structures.

After the latent structure is determined, Latent GOLD 3.0 could treat variables related to objective class positions and status as covariates in an examination of the relationship between these variables and the latent subjective classes. This kind of analysis is similar to multinomial logistic regression. In order to focus further analysis on the meaning of "latent middle class," "latent working class," and "latent lower-middle class" (see below) and because of the limited sample size, further analysis, however, would use OLS regression and treat posterior (i.e., predicted) latent class membership probabilities assigned to each case in the sample as dependent variables. For each dependent variable, the baseline regression model includes respondent's age, marital status, level of education, monthly family income, dummy variables of employment status, level of occupational skill, and level of job authority. The second regression model adds the job characteristics of the respondent's spouse into the baseline model.

Findings

Response Patterns of Three Questions on Class Identification

Upon an inspection of the marginal distributions in Table 1, it is obvious that the number of choices given affects class identification. For instance, the choice of “middle class” drops from a little bit over 50% in the 5-class format, which does not include the label “working class,” to less than 40% in either 3-class format or 6-class format, which offers “working class” as a choice.

The percentage of working class identifiers also changes from about 58% to 31% when the number of choices changes from 3 to 6. About a quarter of respondents who identify in the 3-class situation as working class would change their class identification to “middle class,” and 17% would change their class identification to “lower middle class” in 6-class situation. About one half of those who identify in the 3-class situation as “working class,” however, identify with “middle class” when the choice of “working class” is not present in the 5-class situation, and 45% identify either with “lower middle class” or “lower class.” The pattern of changes indicates that “working class” identifiers tend to choose “middle class” rather than “lower middle class” when the choice of “working class” is not offered. This tendency is not consistent with the findings of Hsueh’s (1997) study.

The presence or absence of a “working class” category also affects “lower middle class” identifiers. Most of those who identify with “lower

Table 1 Bivariate Crosstabulation of Class Identification with 3, 5, and 6 Classes

	Class identification																					
	3 classes					6 classes					3 classes											
	Capitalist	Middle	Working	Don't know	N	Upper middle	Middle	Lower middle	Working	Lower	Don't know	Upper middle	Working	Lower	Don't know	N	Capitalist	Middle	Working	Don't know	N	
Upper row %	4	8	2	0	14	2	2	0	0	0	0	0	0	0	0	14	5	5	3	0	0	13
col %	28.6	57.1	14.3	0.0	100.0	71.4	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	38.5	38.5	23.1	0.0	0.0	100.0
Upper middle row %	13.3	1.0	0.1	0.0	0.6	76.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	16.7	0.6	0.2	0.0	0.0	0.5
col %	15	197	65	7	1	285	2	188	66	3	24	2	1	0	286	15	179	33	5	1	233	
Upper middle row %	5.3	69.1	22.8	2.5	0.4	100.0	0.7	65.7	23.1	1.0	8.4	0.7	3.8	0.0	100.0	6.4	76.8	14.2	2.1	0.4	100.0	
col %	50.0	24.3	4.7	6.3	3.1	0.6	15.4	80.3	7.1	0.9	3.3	1.8	3.0	0.0	12.1	50.0	22.0	2.4	4.3	3.0	9.8	
Middle row %	9	530	643	37	14	1233	0	39	806	105	275	7	4	0	1236	5	53	344	33	10	926	
col %	0.7	43.0	52.1	3.0	1.1	100.0	0.0	3.2	65.2	8.5	22.2	0.6	0.3	0.0	100.0	0.5	37.7	37.1	3.6	1.1	100.0	
Lower row %	30.0	65.4	46.8	33.3	43.8	52.3	0.0	16.7	87.0	32.0	37.8	6.4	15.4	0.0	52.2	16.7	65.8	24.9	28.7	30.3	39.1	
Lower middle row %	2	65	412	17	3	499	1	3	42	200	245	9	0	0	500	1	69	231	23	4	328	
col %	0.4	13.0	82.6	3.4	0.6	100.0	0.2	0.6	8.4	61.0	49.0	1.8	0.0	0.0	100.0	0.3	21.0	70.4	7.0	1.2	100.0	
Lower row %	6.7	8.0	30.0	15.3	9.4	21.2	7.7	1.3	4.5	8.4	33.7	8.2	0.0	0.0	21.1	3.3	8.5	16.7	20.0	12.1	13.8	
Lower middle row %	0	6	215	12	2	235	0	2	4	12	139	79	1	0	237	3	22	686	15	7	733	
col %	0.0	2.6	91.5	5.1	0.9	100.0	0.0	0.8	1.7	5.1	58.6	33.3	0.4	0.0	100.0	0.4	3.0	93.6	2.0	1.0	100.0	
Not sure row %	0.0	0.7	15.6	10.8	6.3	10.0	0.0	0.9	0.4	3.7	19.1	71.8	3.8	0.0	10.0	10.0	2.7	49.7	13.0	21.2	30.9	
col %	0	0	4	5	1	10	0	1	1	1	6	1	2	0	11	1	3	77	23	5	109	
Don't know row %	0.0	0.0	40.0	50.0	10.0	100.0	0.0	0.0	9.1	9.1	54.5	9.1	18.2	0.0	100.0	0.9	2.8	70.6	21.1	4.6	100.0	
col %	0.0	0.0	0.3	4.5	3.1	0.4	0.0	0.1	0.3	0.8	0.9	7.7	0.0	0.5	0.5	3.3	0.4	5.6	20.0	15.2	4.6	
Don't know row %	0	2	25	33	2	62	0	0	3	7	28	9	15	1	63	0	0	0	7	16	3	26
col %	0.0	3.2	40.3	33.2	3.2	100.0	0.0	0.0	4.8	11.1	44.4	14.3	23.8	1.6	100.0	0.0	0.0	26.9	61.5	11.5	100.0	
Don't know row %	0.0	0.2	0.3	29.7	6.3	2.6	0.0	0.0	0.3	2.1	3.9	8.2	57.7	33.3	2.7	0.0	0.0	0.0	0.5	13.9	9.1	1.1
col %	0	3	8	0	9	20	0	0	2	0	10	3	3	2	20	0	0	0	0	0	3	3
Don't know row %	0.0	15.0	40.0	0.0	45.0	100.0	0.0	0.0	10.0	0.0	50.0	15.0	15.0	10.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
col %	0.0	0.4	0.6	0.0	28.1	0.8	0.0	0.0	0.2	0.0	1.4	2.7	11.5	66.7	2.7	0.0	0.0	0.0	0.0	0.0	0.1	0.1
N	30	811	1374	111	32	2358	13	234	926	328	727	110	26	3	2367	30	812	1381	115	33	2371	
col %	1.3	34.4	58.3	4.7	1.4	100.0	0.5	9.9	39.1	13.9	30.7	4.6	1.1	0.1	100.0	1.3	34.2	58.2	4.9	1.4	100.0	
After deleting "not sure," "don't know," and "don't understand"	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
After deleting "not sure," "don't know," and "don't understand"	After deleting "not sure," "don't know," and "don't understand":																					
Chi-square = 538.821, df = 8, Cramer's V = 0.352, Gamma = 0.747.	Chi-square = 3682.929, df = 20, Cramer's V = 0.637, Gamma = 0.799.																					
Chi-square = 1017.009, df = 10, Cramer's V = 0.479, Gamma = 0.849.	Chi-square = 1017.009, df = 10, Cramer's V = 0.479, Gamma = 0.849.																					

middle class” choose “working class” when “lower middle class” is not offered. When both “lower middle class” and “working class” are possible choices, about one half of “lower middle class” identifiers switch to “working class.” Different numbers of choices also induce different percentages of no class awareness. If those who answer “not sure,” “don’t know,” or “don’t understand” are all taken together as the case of no class awareness, then the lowest percentage of such case (about 1%) occurs in the situation of 6-class format and the highest percentage (about 6%) is found in the situation of 3-class format. This finding suggests that the meaning of social classes is clearer to respondents when class identification is given in the format of a rank-ordered status labels mixed with the category of “working class.” A moderate to strong correlation, depending on the measures of association, is found between any pair of the three questions on class identification. Obviously respondents are quite consistent in making judgments about their class locations.

Latent Class Analysis of the Three Questions on Class Identification

Table 2 presents the results of fitting various numbers of latent classes to the same three indicators of class identification for the total sample, men’s sample, and women’s sample. The results for the total sample indicate that, in terms of BIC of the likelihood ratio chi-squared statistic L^2 , and p-value, a latent class model with five classes (M_5) is a reasonably good fit. The index of classification error, however, shows that the fit is actually slightly worse

than that of the 4-class model (M_4). Moreover, by examining bivariate residuals¹ of M_5 , the bivariate residual between the survey question with 5 choices and the survey question with 6 choices reaches a value of 3.48, indicating an inadequate latent model. Therefore, at this stage, a 6-class model (M_6) with gender as an active covariate is chosen as the best-fit model for the total sample. This 6-class model assumes that men and women have the same number of latent classes, but allows for different class probabilities across gender.

Table 2 Comparisons of Latent Class Models Based on the Total sample, the Men's Sample, and the Women's Sample

	Model		L^2	BIC (L^2)	DF	p-value	% Reduction in L^2 (H_0)	Classification Error
Total (N=2,405)	M_0	1-class	3819.2	-995.4	620	5.2×10^{-453}	0.0%	0.000
	M_1	2-class	1756.7	-2092.7	600	7.5×10^{-114}	54.0%	0.025
	M_3	3-class	1116.5	-3387.5	580	2.4×10^{-36}	70.1%	0.031
	M_4	4-class	731.7	-3617.0	560	1.3×10^{-6}	80.8%	0.051
	M_5	5-class	512.2	-3681.2	540	0.80	86.6%	0.060
	M_6	6-class	356.0	-3682.1	520	1.00	90.7%	0.053
	M_{6ch}	6-class restricted (complete homogeneity)	427.6	-3649.3	525	1.00	88.9%	0.042
Male (N=1,194)	M_{0m}	1-class	1855.2	-247.4	301	5.1×10^{-227}	0.0%	0.000
	M_{1m}	2-class	811.6	-1186.4	282	9.7×10^{-53}	56.3%	0.025
	M_{3m}	3-class	505.6	-1357.8	263	1.6×10^{-17}	72.7%	0.031
	M_{4m}	4-class	299.3	-1429.5	244	0.01	83.9%	0.051
	M_{5m}	5-class	193.2	-1400.9	225	0.94	89.6%	0.060
	M_{6m}	6-class	123.5	-1336.0	206	1.00	93.3%	0.053
Female (N=1,164)	M_{0f}	1-class	1810.6	-314.3	301	1.9×10^{-213}	0.0%	0.000
	M_{1f}	2-class	846.9	-1143.9	282	7.8×10^{-58}	51.3%	0.021
	M_{3f}	3-class	505.6	-1351.0	263	1.6×10^{-17}	68.7%	0.031
	M_{4f}	4-class	303.9	-1418.6	244	0.005	80.7%	0.038
	M_{5f}	5-class	198.2	-1390.2	225	0.90	86.5%	0.034
	M_{6f}	6-class	132.9	-1321.3	206	1.00	90.1%	0.041

To further test the possibility of a complete homogeneity model as between men and women, a model with 6 latent classes and gender as an inactive covariate is fitted (M_{6ch}). In terms of overall goodness of fit, M_{6ch} fits the data well. The difference of L^2 values as between M_{6ch} and M_6 , however, is 71.6, which is statistically significant with 5 degrees-of-freedom. The model of complete homogeneity is therefore rejected. This means that men and women do not have an identical latent class model with equal latent class probabilities.

In order to see if men and women may have very different perceptions of class membership, separate analyses of the men's and women's samples are conducted. The results of fitting various latent class models to these two samples are also presented in Table 2. The results clearly indicate that women's perception of class membership is rather compressed as compared with that of men. In terms of indices of overall goodness of fit and bivariate residuals,² a 4-class model as well as a 5-class model already fit the women's data fairly well. For men, however, a 6-class model is the best fit. Therefore, the uncovered latent structure of class identification for the total sample is

¹ One of the main assumptions of latent class analysis is the local independence assumption, which means that, if the model fits well, then the difference between the estimated and observed association between each pair of indicators should be small. Latent GOLD 3.0 provides Lagrange-type chi-square statistics called bivariate residuals as a direct check of this assumption. If a bivariate residual is greater than 3.48, then it is an indication that the correlation between a pair of indicators has not been adequately explained by the fitted latent class model (Vermunt and Magidson 2003, 2005).

² Upon request, the author would be glad to provide detailed results.

influenced by the men's more differentiated perception of class membership.

Even though a 6-class model could also fit the women's data well, it does not follow that the latent constructs of this model are the same for both men and women. Therefore, the partial homogeneity model fitted to the total sample and the corresponding models for the two gender specific samples should be compared. Comparison is made by examining the difference between the combined L^2 of the men's and women's samples (i.e., L^2 s of M_{6m} and M_{6f}) and the L^2 of M_6 . The difference of these two L^2 values is 99.6, which is not significant with 108 degrees of freedom ($p = 0.71$). In short, it is safe to conclude that the latent structure with 6 latent classes is the same for both men and women. The latent class probabilities, however, differ across gender.

What are these six latent classes and how do men and women differ in their latent class probabilities? Table 3 shows that, in terms of conditional probabilities for the total sample, these six latent classes may be interpreted as consisting of 5 subjective classes and one category associated with those who have no clear idea about their class locations. These five subjective classes could be labeled as latent upper middle, latent middle, latent lower middle, latent working, and latent lower class.

The first latent class (Class 1) could be labeled as latent upper middle class because it is clearly associated with the label "upper middle class" offered by the 5- and 6- class formats. It also shows that this latent class associates more strongly with "middle class" than the "capitalist" label of the 3-class format question. According to latent class probability, less than 10% of the total sample, including slightly more men than women, is

Table 3 Parameter Estimates of the 6 Latent Class Model for the Total Sample

Latent Class Probabilities	Class 1 (Upper middle)	Class 2 (Middle)	Class 3 (Lower middle)	Class 4 (Working)	Class 5 (Lower)	Class 6 (No class awareness)
Total	0.097	0.382	0.155	0.298	0.040	0.028
Man	0.112	0.336	0.118	0.326	0.047	0.017
Woman	0.083	0.430	0.191	0.230	0.032	0.038
<i>Conditional Probabilities*</i>						
5-class						
Upper	0.053	0.002	0.000	0.000	0.000	0.000
Upper middle	0.849	0.073	0.005	0.030	0.000	0.019
Middle	0.091	0.909	0.316	0.379	0.034	0.120
Lower middle	0.007	0.009	0.674	0.338	0.061	0.001
Lower	0.000	0.004	0.000	0.208	0.899	0.000
Not sure	0.000	0.000	0.000	0.006	0.000	0.093
Don't know	0.000	0.000	0.005	0.030	0.005	0.588
Don't understand	0.000	0.002	0.000	0.009	0.000	0.179
3-class						
Capitalist	0.091	0.006	0.003	0.004	0.000	0.000
Middle	0.770	0.600	0.231	0.008	0.022	0.022
Working	0.122	0.353	0.700	0.981	0.814	0.099
Don't know	0.013	0.032	0.054	0.003	0.142	0.673
Don't understand	0.004	0.010	0.012	0.004	0.021	0.206
6-class						
Upper	0.052	0.000	0.003	0.000	0.000	0.000
Upper middle	0.913	0.022	0.005	0.000	0.022	0.000
Middle	0.012	0.960	0.138	0.001	0.002	0.074
Lower middle	0.002	0.004	0.780	0.035	0.079	0.100
Working	0.012	0.014	0.075	0.948	0.005	0.248
Lower	0.009	0.000	0.000	0.011	0.890	0.205
Don't know	0.000	0.000	0.000	0.005	0.002	0.327
Don't understand	0.000	0.000	0.000	0.000	0.000	0.046

* Conditional probabilities given here are for the total sample. Upon request, the author would be glad to provide conditional probabilities for men's and women's samples.

assigned to this latent class.

The largest latent probability is related to the second latent class (Class 2). This is true for the total sample and also true for men and women separately, but women are much more likely to be assigned to this class. This second latent class could be denominated “latent middle class” because it is clearly associated with the label “middle class” of all three formats. The third latent class (Class 3) is clearly associated with the label “lower middle class” of the 5-class and 6-class formats. It is also obvious that when no such label is offered, as in the 3-class format, people associated with this class identify themselves as “working class” rather than as “middle class.” Overall, this third latent class has the third largest proportion of respondents, and men are slightly less likely than women to be assigned to this category. On the other hand, men have a much larger chance of being assigned to the fourth latent class.

The second largest proportion of respondents is assigned to the fourth latent class (Class 4). This class is clearly associated with the label “working class” offered by two of the three survey questions. Less than 5% of either men or women are assigned to the fifth latent class (Class 5), which is fairly clearly associated with the label “lower class.” This fifth latent class also has a strong association with the label “working class” in the case of 3-class format, which does not offer the choice of “lower class.” About 3 percent are assigned to the sixth latent category (Class 6), with women more likely than men to be assigned. This last category is quite clearly associated with the answer “don’t know.” In other words, respondents who have no clear class identification are assigned to this category.

On the whole, the results of latent class analysis so far lend sufficient support to hypotheses H1, H1a, and H2. Even though the latent subjective classes are an inductive result from three different survey questions, it is nonetheless reasonable to say that the choice of “working class” offered by two of the survey questions has a unique meaning to about 30% of respondents in Taiwan. When this choice was offered, a significant proportion of the respondents turned away from the “middle class” or “lower middle” choices in favor of “working class.”

Objective Bases of Latent Subjective Classes

How does the uncovered latent structure of class identification relate to objective class position and socioeconomic status? Since men and women have different probabilities of class membership, the present research proceeds with separate analyses of men’s and women’s samples. Although women seem to have a different perception of class membership, for reason of comparability, the analysis proceeds with the 6-class model as the best-fit latent class model for both men and women. Due to the small percentages of latent upper middle class and latent lower class, and the long-standing theoretical interest in the subjective identification with working class and middle class, examination of the objective bases of latent subjective classes focuses on latent middle class, latent lower middle class, and latent working class.³

³ For the sake of brevity, the following discussion of the regression analysis of latent subjective class identification will drop “latent” from their corresponding labels.

Table 4 presents the results of regression analyses of respondents' latent subjective classes on their objective class positions and social statuses. In terms of the overall explanatory power of these characteristics, as indicated by adjusted R^2 , the specified regression model, in general, explains men's class identification better than women's. The model can best explain the variation of men's working class identification. The same model explains only about half as much variance in men's middle class identification and women's working class identification. The model has little explanatory power for men's and women's lower middle class identification.

An examination of the individual effects of respondent's characteristics shows that hypothesis H3 is well supported. The relationships found, however, are not always in the expected directions. Among the status related variables, only family income has no effect on class identification. This finding is different from findings of many previous studies (cf. Hsueh 1997; Marsh 2002).

Age appears to have an equal and negative effect on men's and women's lower middle class identification. As age increases by 10 years, the person is 4% less likely to identify as lower middle class. Older men, however, are more likely to identify as working class. The effect of being married is somewhat surprising. Being married is associated with men's, but not women's, tendency to identify with middle class. Previous studies would lead us to expect that married women are also more likely than unmarried women to identify as middle class. The effect of education is consistent with the expectation that higher educational level is associated with higher probability of being middle class. For college graduates (level 5 of education), both

genders' chances of identifying as middle class is about 20% higher than for non-college graduates.

Results concerning respondents' job characteristics related to objective class positions present a mixture of the expected and the unexpected. As expected, being self-employed generally prompts men to identify as middle class.⁴ Being self-employed decreases the probability, for both men and women, of identifying as working class. On the other hand, it is unexpected to find no difference in the effect of being an employer and that of being an employee (the reference category). It is possible that work authority mediates part of this effect, at least for men, since work authority has a negative effect on working class identification for men. Nevertheless, even if such mediation explains the result of working class identifiers, it does not apply among middle class identifiers.

Also interesting is that, for men and women, non-participants in the labor force, namely the unemployed, retired, and homemakers, are less likely to identify as working class. This may indicate that usage of "working class" in Taiwan largely excludes those who are not wage earners or not in certain occupations. This speculation finds support in Table 4, which shows that both unskilled laborers and skilled laborers are much more likely to identify as working class than clerical workers, who are more likely to be middle class identifiers. Retirees and homemakers are more likely to identify as middle class. Retired women and female homemakers are also more likely to identify

⁴ This result, however, differs from Huang's (1999: 21-40) finding that self-employed tends to identify as working class.

as lower middle class. In other words, in Taiwan, withdrawal from the labor force might prompt people to see themselves not as a “working” person but more as some kind of “middle class.” Hence, middle class identifiers are much more heterogeneous than working-class identifiers.

Does a working spouse’s objective position in the class structure or status system affect one’s judgment about his or her social class membership? Consistent with findings in previous studies, in Table 5, spouses’ education and job characteristics generally affect women’s class identification more strongly than men’s. The contribution of these characteristics, however, is not large: the adjusted R^2 increases only by 1 or 2 percent.

Turning to the effect of spouses’ job characteristics, only one of wife’s job characteristics has a significant effect on married men’s class identification. Table 5 shows that if a married man’s wife is a clerical worker, then, in comparison with single men or those whose wives do not work, he is less likely to identify as working class. This is reasonable, since most working wives have low-end jobs and the differentiation of social class among them would tend to be between low white-collar jobs and low-skilled jobs.

Table 5 shows that effects of married women’s own status or class characteristics decrease somewhat when working husband’s characteristics are included in the analysis. The effect of women’s education is the most dramatically reduced. Among women who identify as middle class, the positive effect of their education becomes insignificant, and the working husbands’ work authority becomes important. A similar pattern appears in women’s identification as working class. The negative effect of women’s

Table 5 Regressions of Latent Subjective Classes on Variables Related to Men's and Women's Own and Spouses' Objective Class Positions and Social Status

	Men's Latent Subjective Classes						Women's Latent Subjective Classes						
	Middle			Working			Middle			Working			
	B	SD		B	SD		B	SD		B	SD		
Own characteristics													
<i>Status related</i>													
Age	-.003	.002	-.004***	.001	.005**	.002	-.001	.002	-.004***	.001	.000	.001	.000
Married	-.007	.220	-.083	.174	.189	.210	-.297	.188	.322**	.121	-.166	.154	.154
Education	.043**	.015	-.008	.012	-.035*	.014	.007	.019	.000	.012	-.037*	.015	.015
Family Income	.010	.009	.001	.007	-.012	.009	.005	.009	.000	.006	-.011	.008	.008
Class related													
Employment status													
Self-employed	.094*	.038	.007	.030	-.124***	.036	.015	.062	.041	.040	-.096	.050	.050
Employer	.026	.048	.048	.038	.000	.046	.119	.097	.093	.063	-.123	.079	.079
Family worker	.069	.062	-.086	.048	-.021	.059	-.010	.060	.039	.039	-.051	.049	.049
Unemployed	.039	.061	.059	.048	.240***	.058	.099	.094	.079	.061	-.171	.077	.077
Retired/Home-Maker	.133*	.067	.082	.053	-.246***	.064	.124*	.058	.088*	.038	-.111	.047	.047
Occupational Skill	-.246***	.075	-.009	.059	.188**	.071	-.244***	.068	-.030	.044	.141*	.056	.056
Unskilled and farm work	-.251***	.065	.022	.051	.208**	.062	.165**	.052	-.028	.033	.131**	.042	.042
Service work and skilled labor	-.048	.069	.021	.055	-.020	.066	-.055	.061	.017	.039	.061	.050	.050
Semi-professional	-.047	.071	-.090	.056	-.057	.068	-.104	.066	-.023	.042	-.018	.053	.053
Administration/Professional	-.047	.071	-.090	.056	-.057	.068	-.104	.066	-.023	.042	-.018	.053	.053
Level of work authority	-.012	.021	.012	.017	-.055**	.020	-.044	.037	-.022	.024	-.008	.030	.030
<i>Spouse's characteristics</i>													
<i>Status related</i>													
Middle school or below	.072	.217	.048	.171	-.189	.206	.189	.178	-.286*	.114	.171	.145	.145
High school	.137	.219	.052	.173	-.234	.208	.275	.179	-.277*	.115	.127	.146	.146
College or above	.019	.224	.027	.177	-.263	.213	.302	.183	-.333**	.117	.121	.148	.148
Class related													
Employment status													
Self-employed	.011	.075	-.030	.059	.054	.071	-.028	.067	.039	.043	.073	.055	.055
Employer	-.083	.140	.016	.110	.063	.133	.077	.076	-.045	.049	.009	.062	.062
Employee	.002	.059	-.011	.047	.035	.057	-.034	.066	-.003	.042	.119*	.053	.053
Unskilled and farm work	-.060	.061	.020	.048	-.043	.058	-.008	.078	.020	.050	-.041	.064	.064
Service work and skilled labor	-.019	.060	.052	.048	-.030	.057	.004	.077	-.007	.049	.016	.062	.062
Clerical	.119	.070	.009	.056	-.142*	.067	.021	.104	.120	.067	-.092	.085	.085
Semi-professional	-.072	.090	.012	.071	-.037	.085	.008	.088	.022	.057	-.007	.070	.070
Administration and Professional	-.094	.094	.026	.074	.017	.089	.097	.085	.000	.055	-.060	.072	.072
Work authority	-.065	.066	-.016	.052	.096	.063	.102*	.045	.043	.029	-.117**	.037	.037
Constant	.357	.148	.383	.117	.299	.141	.540	.152	.211	.098	.585	.122	.122
N	1,151	1,151	1,151	1,119	1,119	1,119	1,119	1,119	1,119	1,119	1,119	1,119	1,119
F	5.242***	2.077***	8.865***	4.015***	1.998**	5.289***							
Adjusted R2	.088	.024	.151	.066	.023	.091							

* p ≤ .05 ** p ≤ .01 *** p ≤ .001

education becomes smaller when the husband works as an employee or has work authority. These two job characteristics of the husband, however, have opposite effects. A woman whose husband is an employee is more inclined to identify as working class, while a woman whose husband supervises others is less inclined to identify as working class.

Table 5 also shows that while a woman's own education has no effect on her class identification as lower middle class, for married women the husband's secondary schooling or higher level of education has the effect of reducing the probability of her identification as lower middle class. It is also important to observe that for women, being married would increase the chance of identifying as lower middle class by about 32%.

In summary, findings in the present work mostly support hypotheses H3 and H3a that subjective classes found by LCA is related in a meaningful way to objective class and status positions. The results specifically support H3a by showing that objective criteria related to status and class positions are more effective in explaining men's than women's class identification. The findings also show that men's class identification is rather independent of their spouses, but women's class identification is somewhat affected by their husbands' status and class characteristics. An important question remains, however, since the variation of lower middle class identification is largely unexplained.

Conclusion

This research advances the understanding of class identification in

Taiwan by uncovering the latent structure of class identification. In the past, a major methodological concern in the study of subjective class identification has been the changeability of response patterns solicited by different question formats. The number of class labels given as well as the wording of the class labels affects the distribution of class self-identification responses. The present research discovers that Taiwanese perceptions of class stratification do exhibit a latent structure in spite of considerable variability. This latent structure consists of five subjective social classes and one category pertaining to absence of clear class awareness. The uncovered latent structure supports the strategy of mixing ranked class labels and the categorical label “working class” as the single measurement of subjective class identification in a survey. In other words, if only one question is allowed in a survey to probe the respondent’s class identification, then it should definitely include “working class” and “middle class,” and should also include other status ranked labels such as “upper middle class,” “lower middle class,” and “lower class” as well as a category “don’t know or not sure.” The “upper class” can be safely ignored.

This finding should also caution researchers not to assume subjective class identification measured in such fashion as an ordinal variable. The strategy of mixing ranked status labels and a categorical label apparently captures different ways of perceiving and evaluating individuals’ relative standings in the stratification order. The label “working class” implies in Taiwan that one is presently participating in the labor market and definitely has a unique meaning to about 30% of the population in Taiwan. The working-class identifiers are very likely to be employed unskilled or skilled

laborers and service workers. The label “middle class,” on the other hand, attracts a broad variety of people. On the one hand, as expected, more highly educated men and women, as well as self-employed men, tend to identify with this label. On the other hand, non-participants of the labor force are also inclined to see themselves as middle class.

The present work further indicates that researchers should be aware of the possibility that the label “lower middle class” or “lower class” may generate considerable measurement error among female respondents. The analyses show that men and women in Taiwan have different perceptions of class membership. Men’s perception of class membership is more differentiated, especially in the range of lower middle class and lower class. Women, on the other hand, seem to compress their view by directing their identification more towards the middle rungs of the class stratification. This variation of class image may be attributed to different experiences of the sexes in the work world.

Furthermore, married men and married women differ in the impact of their working spouses’ job characteristics on their own class identification. Married men’s class identification is hardly affected by their wife’s job characteristics. The impact is limited to a reduction in probability of identifying as working class when the wife is in a lower white-collar worker. Husbands’ job characteristics, however, have more impacts on their wives’ class identification. If the husband is in a supervisory position, the wife tends to identify as middle class rather than working class. Married women who might otherwise identify as lower class tend to identify with a higher class because of the husband’s level of education. In short, the present research

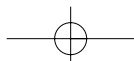
generally supports previous findings that men tend to decide their own class identification without factoring in wife's characteristics. Women, to the contrary, are likely to take into account husband's socioeconomic characteristics when making class identification.

The present research also finds that, while men's and women's status and class related variables could to some extent explain identification as working class or middle class, those variables are not good predictors of lower middle class identification. At least among women, it may be that lower middle class is not really a meaningful or valid choice of class identification. It is possible that this particular class identification in effect reflects a perception of being a part of the middle class, even though a lower ranked type. Is it possible that lower middle class is more like a status differentiation associated with culture consumption, rather than a group of collective interest? Preliminary analysis has indicated such a possibility,⁵ but the substantive issue of the relationship between uncovered latent class identification and cultural consumption will be the topic of another research.

⁵ Preliminary analysis indicates that latent subjective class identification has significant independent effects of on tastes for different kinds of music, after controlling for objective social statuses and class positions.

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