Market Competition and Media Performance: Reexamining the Media Performance of the Cable Television Industry in Taiwan

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Using industrial organization theory as the theoretical framework, the purpose of this study is to examine the relation between market competition and the media performance of Taiwan's cable television industry. To measure the variable of media performance, this study focused on 6 indicators: subscribers' satisfaction, penetration rates, subscription fees, the number of channels, the net profits of system operators, and customer service. To collect data for this study, 2 research methods were adopted: intensive interviews directed toward 64 system operators and a telephone survey involving a probability sampling approach with 2,642 valid questionnaires.

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media performance of Taiwan's cable television industry. This study, besides focusing on subscribers' satisfaction, adds two objective dimensions: (a) organizational efficiency, including penetration rates and net profits of system operators; and (b) actual customer services comprising subscription fees, the number of channels, and various customer services. In this way, we can better understand the media performance of cable television systems in Taiwan.

Taiwan's cable television industry was legalized in 1993, and its penetration level rapidly increased from 20% in that year to more than 80% in 2000. Its development is similar to that of its counterpart in the United States in two respects. First, cable television in Taiwan originally functioned as a community antenna and has now become a strong competitor of the four terrestrial television stations. Second, the cable television industry in Taiwan is also heavily integrated both horizontally and vertically with four multiple system operators dominating the market (P. H. Chen, 2002; Li, 2006). Taiwan's Cable Television Law has divided the island into 51 franchise areas, and the governing organization, the Government Information Office (GIO), has tried to issue more than one license in each franchise area to prevent monopolization in the market. However, several recent studies have shown that a monopolistic market structure has come to characterize more than one half of these areas (P. H. Chen, 2002; Li, 2004). With more franchise areas exhibiting a monopolistic market structure, scholars are becoming increasingly concerned with the performance of cable television system operators in Taiwan.

Li (2004), in a study on this issue, found a positive relation between market competition and the media performance of Taiwan's cable television industry. However, Li (2004) employed only one dimension to measure the media performance; namely, the subscribers' satisfaction with program service, customer service, and community service. Because there are limitations to such an approach, our study here uses IO theory to extend Li's (2004) study and thereby to provide more comprehensive measures of the media performance of Taiwan's cable television industry.

LITERATURE REVIEW

IO Theory

IO theory is an approach that researchers use to understand the relationships between the structure, conduct, and performance in markets. There are several models, one being the structure–conduct–performance (SCP) paradigm, which reflects researchers' attempts to explain how firms behave under different market structures that, in turn, affect market performance. Although the SCP paradigm has received a great deal of scholarly attention since the 1970s, various criticisms

that center mainly on two issues have been leveled against it. First, the new IO economists believe that the relations among structure, conduct, and performance are not linear and causal, but interactive in a reciprocal sense within a market. Second, the new IO economists believe that the relation between market structure and performance is weak and that it has to depend on the strategic interactions of the firms in a market. In other words, these economists see that the strategic behaviors of firms exert a much more important influence on performance than does the market structure itself (Albarran, 2002, pp. 29–41; Fu, 2003; Van der Wurff, 2002; Young, 2000).

Although the link between market structure and performance is weakening, some economists believe that market structure still plays an important role in terms of likely market outcomes or performance. These economists believe that the strategic behaviors of firms will depend very much on the conjectures that, regarding their rivals, are based on the characteristics of market structure such as rivals' market power. Furthermore, when the strategic behaviors of firms are constrained by policies or regulations, market structure will have a significant effect on performance. Therefore, this study assumes that market structure still exerts a significant influence on likely market outcomes (Wirth & Bloch, 1995; Young, 2000).

Market Structure and Media Performance

The structure of a market is usually dependent on several factors, with the concentration of sellers being the most important factor because it determines much of the market's structure. Researchers base their evaluations of a firm's market performance on the firm's ability to meet various goals related to organizational efficiency, on the quality of media products, or on the diversity of mass media (Albarran, 2002, pp. 29–41; Li & Chiang, 2001; Lin, 1995; Litman, 1979; McQuail, 1992).

Although most media economists agree that market structure affects media performance, they disagree about how market structure affects media performance. According to some economists, it is only in a concentrated market structure that firms can have sufficient financial resources to test different products and develop new products (Burnett, 1992; Schumpeter, 1950). However, other economists argue that only in a competitive market will firms try to differentiate their own products from other firms' products to cater to a specific niche, leading to increased product diversity in the mass media market (Coser, Kadushin, & Powell, 1982; Litman, 1979; Peterson & Berger, 1975; Rothenbuhler & Dimmick, 1982; Ryan, 1985).

A similar pattern applies to the empirical studies because the findings regarding the competition–performance relation have not been conclusive. Most early studies found that increased competition within a market led to greater

diversity and better quality in terms of mass media products (Atwater, 1984; Bae, 1999; De Jong & Bates, 1991; Everett & Everett, 1989; Grant, 1994; Hellman & Soramaki, 1994; Johnson & Wanta, 1993; Lacy, 1987, 1988, 1989; Li, 1999; Litman, 1979; Powers, Kristjansdottir, & Sutton, 1994; Rogers & Woodbury, 1996; Wakshlag & Adams, 1985). For example, Chan-Olmsted (1996) found that the increased competition in commercial children's television in the United States led to the availability of more choices to young American audiences. Barrett (1995) discovered that the existence of direct cable competition in the city of Paragould resulted in more local programming, better customer service, and lower prices. McDonald and Lin (2004) showed that the incorporation of new networks into the American television market had a positive effect on programming diversity.

Although most studies note that market competition has positively affected media performance, a few studies observe just the opposite (Chambers, 2003; Hellman & Soramaki, 1985; Hvitfelt, 1994). Lin (1995) found that competition led to a decrease in programming diversity in the three U.S. networks. Li and Chiang (2001) and Liu (1997) analyzed the prime-time programs of Taiwan's three TV stations in the 1990s and discovered that programming diversity gradually declined as competition increased. Einstein (2004) found that the repeal of the financial interest syndication rules led to a more consolidated structure in the U.S. television industry but that program diversity actually increased.

A few studies either failed to come up with evidence of a relation between market competition and media performance or produced mixed results (Cuilenburg, 1999; McCombs, 1988). Lacy (1988) found that competition from TV, cable TV, and radio did not have an observable effect on newspaper content. Van der Wurff and Cuilenburg (2001) discovered that a moderate degree of competition in the Dutch television market led to an increase in programming diversity, but that strong competition had the opposite effect.

Media Performance of Cable Television Systems

Traditional mass media do not have direct contact with consumers, and thus scholars tend to focus on the products of these media to measure their performance (Iosifides, 1999; Li & Chiang, 2001; Lin, 1995; Litman, 1979; McDonald & Dimmick, 2004; McQuail, 1992; Rothenbuhler & Dimmick, 1982; Van der Wurff, 2004). Unlike traditional mass media, cable television systems provide their subscribers with various services such as installation, repairs, or billing, which constitute an important part of the system's media performance. Furthermore, cable television systems use many local community resources such as the installation of coaxial cables along the roads, and the systems are thus expected to facilitate the development of local communities. Therefore, evaluations of the performance of a cable television system should concern not only the products

it provides, but also the services offered to its subscribers and to the community (C. Y. Chen, 1999; Chipty, 2001; Jacobs, 1995; Li, 2004).

RESEARCH HYPOTHESES

Empirical findings regarding the competition–performance relation have tended to be mixed, although most studies indicate a positive relation. The few studies in the literature that find a negative competition–performance relation can be classified into three types: (a) those that investigated the competition–performance relation in the popular music industry (Bielby & Bielby, 2003; Burnett, 1992) and found that organizational factors—not market competition—affected the degree of music diversity, (b) those that compared highly competitive markets with moderately competitive markets and found that the latter led to better media performance (Cuilenburg, 1999; Van der Wurff, 2004; Van der Wurff & Cuilenburg, 2001), (c) those that examined only part of a market and found that competition led to less diversity in terms of media products. For example, Li and Chiang (2001), Lin (1995), and Liu (1997) each investigated the diversity of terrestrial television stations and discovered the existence of a negative competition–performance relation. However, terrestrial television stations provide only some of the programs in a market, and the case may be that researchers who account for cable television programs will uncover a positive relation between competition and diversity. According to Young (2000) as well, studies that account for the whole system find that competition results in better performance.

   On the basis of these findings, three key issues emerge. First, it should be pointed out that the cable television industry in Taiwan did not have organizational factors like those in the popular music industry that generated product innovation. Past studies in the popular music industry show that when large record companies merged with small local companies, they gave local companies sufficient freedom in terms of the selection or the manufacturing of popular songs, and thus a higher degree of concentration led to more diversity in the popular music industry (Burnett, 1992). Second, system operators have now merged their operations to enhance efficiency with some areas having two system operators and others only one. The market competition in Taiwan's cable television industry thus reflects at best only a moderate degree of market competition. Third, accounting for the entirety of a market, and not just part of a market, in this study we would expect there to be a positive relation existing between competition and performance. For the purposes of our analysis, we developed three hypotheses:

   H1: Subscribers' satisfaction regarding program service, system reliability, customer service, and community service will be higher in the franchise

areas where competition exists than in the areas where no competition exists.

H2: The organizational efficiency of cable television systems will be higher in the franchise areas where competition exists than in the areas where no competition exists.

H3: Actual customer services in relation to the cable television systems will be better in the franchise areas where competition exists than in the areas where no competition exists.

METHOD

System Operators' Interviews

According to the data provided on the GIO's Web site (www.gio.gov.tw), at the time this study took place, there were 64 system operators in Taiwan's 51 franchise areas. Targeting the 64 system operators, we conducted intensive interviews to understand the degree of market competition, the monthly subscription fees, the types of customer services, and the channels provided by the system operators in each franchise area. In this part of the study, we joined six research assistants and went to the 51 franchise areas to conduct the interviews. For these interviews, most cable television systems made available to us their general managers together with their program and customer service managers. We conducted these interviews in September and October 2003 and held 59 valid interviews covering all 51 franchise areas.

Market Competition

In addition to using the data from the interviews, we interviewed two experts who were familiar with the current state of Taiwan's cable television industry. One expert was a program manager in a cable television system operator that belongs to the largest multiple system operator (MSO) in Taiwan, and the other was a professor with expertise in analyzing Taiwan's media market.

Using the aforementioned procedure, this study identified three market types in the franchise areas. The first was the monopolistic market because, at the time, only one cable television system was operating there, and the market had the lowest degree of market competition. The second was the non-competitive duopolistic market where two system operators that belonged to the same MSO were providing cable television services. This market had the second lowest degree of market competition. The third was the competitive duopolistic market because it had two independent and competing cable television companies. This last market had the highest degree of market competition. Of the 51 franchise

areas, 34 areas belonged to the monopolistic market, 5 to the non-competitive duopolistic market, and 12 to the competitive duopolistic market.

Organizational Efficiency

To measure organizational efficiency, we used two indicators: the subscription rates for cable television in the 51 franchise areas and the net-profit rates of system operators in the preceding year. The subscription rate was measured by a telephone survey using a proportionate stratified sampling approach, which was based on each county's or city's population relative to Taiwan's population for telephone interviews, and in this way, we could calculate the subscription rate for each franchise area. The data regarding the net-profit rates of the 64 system operators in 2002 were provided to us by the GIO that requires system operators to submit financial reports annually.

Customer Services

Two indicators—monthly subscription fees and three types of customer service— were employed to measure the quality of customer service. The three types of customer service comprised (a) how often the system operators conducted surveys to understand subscribers' satisfaction, from 0 (*no survey at all*) to 3 (*monthly surveys*); (b) the number of hours in which, according to system operators' requirements, engineers had to fix the problems that subscribers called about, from 0 (*there was no such requirement*), 1 (*within 48 hours*), 2 (*within 24 hours*), and 3 (*within 12 hours*); and (c) the number of channels offered.

Subscribers' Satisfaction

We referred our study to Li's (2004) study and to several other studies on subscribers' satisfaction with cable television, whether in the United States or in Taiwan (Atkin, 1992; C. Y. Chen, 1999; Jacobs, 1995, 1996; LaRose & Atkin, 1988; Liu & Chen, 2000). We did so to come up with 18 questions that concern subscribers' satisfaction and that cover four dimensions: system reliability, program service, customer service, and community service. Responses to these questions were processed by the SPSS package for the factor analysis of principal components using varimax rotation. Five factors were extracted from the 18 questions, which were generally congruent with the four dimensions, with the exception that program service was divided into program quality and program service (see Table 1).

The first factor, customer service, contained four items concerning customer service and was similar to Li's (2004) customer service. The second factor,

TABLE 1
Factor Analysis of Subscribers' Satisfaction

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Customer service					
Enough professional knowledge	**.73**	.02	.16	.02	.23
Being nice and polite	**.80**	.02	.15	.11	.18
Prompt services	**.79**	.02	.02	.13	.02
Solving problems efficiently	**.79**	.02	.12	.19	.02
Program service					
Few advertisements	.02	**.70**	.02	.12	.03
Few shopping channels	.02	**.71**	.02	.16	.02
Few advertisements of running text display	.02	**.68**	.02	.15	.02
Low return rate	.02	**.64**	.26	.02	.02
Community service					
Community activities	.11	.02	**.89**	.02	.02
Community services	.12	.02	**.90**	.02	.02
Being credible	.37	.15	**.54**	.02	.29
Meeting customers' needs	.39	.16	**.54**	.13	.23
System reliability					
Clear pictures	.14	.17	.02	**.65**	.10
Out of service infrequently	.17	.24	.02	**.75**	.02
Channels closed infrequently	.02	.38	.12	**.63**	.02
Program quality					
Diversified programming	.02	.36	.15	.22	**.63**
Good quality of programs	.31	.12	.02	.14	**.74**
Reasonable price	.02	.33	.22	.30	**.37**
Eigenvalue	4.46	2.70	1.79	1.33	1.08
% variance explained	23.48	14.20	9.41	7.00	5.68
α	.83	.64	.78	.55	.35

Note.   Numbers in bold indicate the factor loading for each factor.

program service, had four items: few advertisements, low rerun rates, few shopping channels, and few advertisements of running text display. The third factor, community service, consisted of four items, all of which concerned community service. The fourth factor, system reliability, had three items concerning system reliability. The last factor, program quality, also contained three items; namely, diversified programming, good quality of programs, and reasonable prices. After the factor analysis, a reliability analysis was performed on each of the factors. The Cronbach's alphas for the factors were .83 for customer's service, .64 for program service, .78 for community service, .55 for system reliability, and .35 for program quality. Alphas above .7 generally are considered good, and some statisticians would consider the .64 and .55 alphas acceptable (Chyu, 2000).

However, alphas under .7 should be viewed with caution. The program quality scale ($\alpha = .35$) was dropped.

In addition to the 18 items related to subscribers' satisfaction, this study asked the respondents to score (from 0–100 points) the overall performance of their cable television systems, and this variable was referred to as overall satisfaction.

The Questionnaire for Subscribers' Satisfaction

The questionnaire contained three sets of questions. The first set of questions involved asking the respondents where they lived and whether they subscribed to cable television. If the respondents did subscribe, they were then asked to give the names of their system operators. If they could not remember their names, the computer screens would show the system operators' names based on the respondents' locations, and the telephone interviewers would read the names out loud to help the respondents recall them. In this way, this study was able to identify the franchise areas where the respondents were located.

The second set of questions consisted of the 18 questions regarding subscribers' satisfaction. The respondents were asked to indicate on a 7-point scale the extent to which they agreed with the statements of the 18 questions ranging from 1 (*a little bit likely*) to 7 (*extremely likely*). The third set of questions concerned respondents' demographic information: sex, age, educational level, and income.

Telephone Survey

A telephone survey was selected and administered in October 2003 with 12 research assistants who used the Computer Assisted Telephone Interview system to conduct the telephone interviews. The most recent telephone books for every city and county in Taiwan were used for systematic random sampling. Whenever a number was chosen from a telephone book, a "one" was added to the number to avoid any biases existing in the telephone directory (Babbie, 1995; Wimmer & Dominick, 2003). After excluding business numbers, disconnected numbers, and no-answers, this study made 3,544 telephone calls and obtained 2,642 valid questionnaires with a response rate of 74.55%. The week-long telephone survey was conducted in a central location and supervised by the researchers.

RESULTS

This study found that, of the 2,642 respondents, 2,001 were cable television subscribers, indicating a 76% penetration rate—a figure close to that of a study on Taiwan's cable television industry in 2003 that showed that the penetration

rate of cable television reached its highest point in 2000, after which it declined gradually to around 76% in 2002 (GIO Report, 2003). Among the 2,001 cable television subscribers, gender was almost equally divided into males (48%) and females (52%). These subscribers were also more or less equally distributed among the different age groups (from 15 years old to more than 65 years old) with people over 55 years old having a smaller percentage (12.4%) than the other age groups. Roughly 36% of the respondents had a high school degree, 37.1% a college degree, and 9.8% a postgraduate degree. The profile of this sample was similar to that of the general population except that the educational level of the sample was a little higher than that of Taiwan's population, which was also a characteristic of cable television subscribers (GIO Report, 2003; Li, 2004; Liu & Chen, 2000). Therefore, this sample should be quite representative of Taiwan's cable television subscribers.

Competition and Subscribers' Satisfaction

This study conducted five hierarchical regression analyses using subscribers' satisfaction regarding overall satisfaction, system reliability, community service, program service, and customer service as dependent variables and subscribers' demographics, mass media use, types of market competition, and monthly subscription fee as independent variables. The results show that competition had a significant effect on subscribers' satisfaction regarding system reliability, program service, and overall satisfaction. Tables 2 and 3 summarize the data.

Tables 2 and 3 show that only 2 of the 12 variables—types of market competition and newspaper reading—were significant predictors for subscribers' satisfaction regarding system reliability, that the competitive duopolistic market had the highest mean of subscribers' satisfaction regarding system reliability, that the non-competitively duopolistic market had the second highest mean, and that the monopolistic market had the lowest mean. The data also demonstrate that 3 variables—family income, newspaper reading, and types of market competition—had a significant effect on subscribers' satisfaction regarding program service, that the non-competitive duopolistic market had the highest mean of subscribers' satisfaction regarding program service, that the competitive duopolistic market had the second highest mean, and that the monopolistic market had the lowest mean, with the first two types of markets differing little from each other in terms of subscribers' program service satisfaction means. In light of overall satisfaction, Tables 2 and 3 indicate that three variables—age, education, and types of market competition—were significantly predictors of overall satisfaction, and that the monopolistic market had a significantly lower mean than either the non-competitive duopolistic market or the competitive duopolistic market, with the means of the last two types of markets differing little from each other.

TABLE 2
Hierarchical Multiple Regression Analysis for Subscribers' Satisfaction

	Standardized β		
Predictors	System	Program	Overall
Demographics			
Sex	−.013	.042	.000
Age	−.070	−.077	−.173***
Education	−.018	.001	.097**
Personal income	−.013	.090	.014
Family income	.053	−.105*	−.013
Multiple R	.079	.113	.211***
Increased R^2	−.002	.005	.037
Media use			
TV	−.016	.015	.031
Radio	.031	−.001	−.032
Newspapers	−.083*	−.142***	.005
Magazines	.005	−.018	−.040
Movies	−.047	.010	−.029
Internet	.004	−.017	.007
Multiple R	.127	.183*	.223
Increased R^2	−.002	.010	−.003
Competition			
Type of market	.115**	.094*	.081*
Multiple R	.165**	.205*	.231
Increased R^2	.010	.007	.003
Subscription fee			
Monthly fee	.026	.007	.063
Multiple R	.167	.205	.239
Increased R^2	−.001	−.001	.002

Note. Total equation for system reliability: $R^2 = .028$, adjusted $R^2 = .007$; total equation for program service: $R^2 = .042$, adjusted $R^2 = .021$; total equation for overall satisfaction: $R^2 = .057$, adjusted $R^2 = .039$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

When conducting the hierarchical multiple regression analysis, this study also performed several tests to make sure that the data fit the assumptions of regression analysis. First of all, collinearity statistical tests were performed to examine the degrees of multicollinearity among the 12 independent variables. The results showed that the degree of tolerance varied from the lowest, .544, to the highest, .964, with the majority of the variables having their degrees of tolerance higher than .60. Furthermore, all the variables had their variance inflation factors (VIFs) lower than 2.0. The degrees from both the tolerance and VIF measures indicate that there were only low degrees of multicollinearity among

TABLE 3
Means of Subscribers' Satisfaction for the Three Types of Market

Subscribers' Satisfaction	Monopolistic Market	Non-Competitive Duopoly Market	Competitive Duopoly Market
System reliability	$M = 14.10$	$M = 14.54$	$M = 14.73$
	$N^a = 894$	$N^a = 258$	$N^a = 575$
	$SD = 3.22$	$SD = 3.18$	$SD = 3.34$
Program service	$M = 11.20$	$M = 11.78$	$M = 11.61$
	$N^a = 847$	$N^a = 235$	$N^a = 522$
	$SD = 4.13$	$SD = 4.22$	$SD = 3.99$
Overall satisfaction	$M = 64.57$	$M = 66.59$	$M = 66.20$
	$N^a = 990$	$N^a = 275$	$N^a = 629$
	$SD = 12.96$	$SD = 12.30$	$SD = 12.99$
Profit rate for system operators	$M = 33.90$	$M = 39.30$	$M = 37.59$
	$N^a = 30$	$N^a = 10$	$N^a = 22$
	$SD = 21.42$	$SD = 12.27$	$SD = 10.79$

Note. N^a = number of respondents or system operators.

the 12 variables (Chyu, 2000). The Pearson correlation analysis was conducted among pairs of the 12 variables to further examine the issue of multicollinearity. The results show that all the pairs had their R values lower than .50 except the pair between personal income and family income, which had an R value of .587, indicating a moderate degree of correlation. Using the range—Mean ± 3 SDs— as the criterion, this study also examined the presence of outliers and found that there were no outliers in the 12 independent variables. Furthermore, this study conducted skewness tests for the 12 variables and found that the degrees of skewness varied from the lowest $-.339$ (education) to the highest 1.380 (family income) with most of them between -0.5 to .0.5, indicating that the degrees of skewness of these variables were within the acceptable ranges (Chyu, 2000; Lind, Mason, & Marchal, 2000; Wu & Tu, 2005).

Competition and Organizational Efficiency

To understand the relation between competition and organizational efficiency, we conducted a hierarchical regression analysis. In it, we treated the net-profit rates of system operators in 2002 as the dependent variable and treated, as the independent variables, total number of channels, types of channels, types of market competition, and seven types of customer service comprising local news, local programs, monthly magazines, access channels, surveys frequency, problem–resolution duration, and the number of hours of weekly self-produced programs. This study further classified the channels provided by system operators into three types: (a) free channels that the system operators did not have to purchase, (b) regular channels that the system operators had to purchase,

and (c) money-making channels that channel operators purchased from system operators to use the channels. Tables 3 and 4 summarize the results.

To ensure that the data fit the assumptions of regression analysis, this study first of all conducted Pearson correlation analysis among pairs of the 12 variables to examine the issue of multicollinearity. The results show that the variable—total number of channels—was highly correlated with 3 variables: free channels ($R = .588$), regular channels ($R = .806$), and money-making channels ($R = .689$); and that the variable—free channels—was also highly correlated with 2 variables: regular channels ($R = .583$) and money-making channels ($R = .658$). After deleting the 2 variables from the regression analysis, collinearity statistical tests were performed among the 10 independent variables. The results showed that all the variables had their degrees of tolerance higher than .60, and that all the variables had their VIFs lower than 2.0. The degrees from both the tolerance and VIF measures indicate that there were only low degrees of multicollinearity among the 10 variables (Chyu, 2000). This study also examined the presence of outliers and found that there was one outlier in the variable of net-profit rates. This outlier whose value was lower than the Mean $- 3\ SD$s was retained in the regression analysis, but its value was replaced by the Mean $- 3\ SD$s. Moreover, this study conducted skewness tests for all variables and found that the degrees of skewness varied from the lowest -1.28 (net-profit rates) to the highest .939 (survey) with most of them between -1.0 to 1.0, indicating that the degrees of skewness of these variables were within the acceptable ranges (Chyu, 2000; Lind et al., 2000). In addition, this study found that after excluding missing data, there were only 48 valid cases in Table 4, indicating a low variable-to-case ratio in this regression analysis.

TABLE 4
Hierarchical Multiple Regression Analysis for System Operators' Profit Rates

Predictor	Standardized β	Multiple R	Adjusted R^2	Increased Adjusted R^2
1. Money-making channels	.336*	.320	.062	
Regular channels	.019			
2. Competition	.307*	.366	.075	.013
3. News	.052	.597	.182	.107
Program	.339*			
Public, education, and government channels	.154			
Magazine	.064			
Survey	.023			
Service criteria	.028			
Hours	.293			

$^* p < .05.$

The data in Tables 3 and 4 show that two variables—types of market competition and local programs—had a positive effect on the profit rates of system operators and that the competitive duopolistic market and the non-competitive duopolistic market differed little from each other in the means of net profit rates, but that each of the two markets had much higher means of net profit rates than had the monopolistic market. Furthermore, the data show that the number of money-making channels was negatively correlated with the profit rates of system operators, indicating that the more profits system operators earned in 2002 the fewer money-making channels they installed in their systems.

To further understand the relation between competition and organizational efficiency, and specifically to examine the relation between competition and subscription rates, this study performed a chi-square analysis, and the results showed that the three types of markets had significantly different subscription rates, $\chi^2(2, N = 2,640) = 24.61$, $p = .000$; with the competitive market having the highest such rate (81.6%), which was obviously higher than that either of the monopolistic market (72.9%) or of the non-competitive duopolistic market (72%).

Competition and Actual Customer Services

Monthly subscription fees and three types of customer services—survey frequency, problem-resolution duration, and the number of channels offered—were employed to measure actual customer service. This study conducted four hierarchical multiple regression analyses using the above four variables as dependent variables, and total number of channels, types of channels, types of market competition, and six types of customer service as independent variables to understand the relation between market competition and actual customer services. The results showed that market competition did not have a significant effect on any of the four dependent variables.

DISCUSSION

Competition and Subscribers' Satisfaction

The first hypothesis states that subscribers' satisfaction regarding program service, system reliability, customer service, and community service will be higher in the franchise areas where competition exists than in the areas where no competition exists. The data analysis shows that the means of three of the five dimensions regarding subscribers' satisfaction—program service, system reliability, and overall satisfaction—in the competitive or the non-competitive duopolistic markets were significantly higher than those in the monopolistic market. Therefore, the findings, in general, support the prediction of H1.

Customer service is an important part of cable television systems' service, and thus this study expected that competition should have influenced subscribers' satisfaction regarding customer service, but this study did not find a significant competition-based effect on subscribers' satisfaction regarding customer service. There are two possible explanations for this unexpected finding. First, Taiwan's cable television system operators have been operating with only basic cable since its legalization, and subscribers are used to having all channels including HBO, Cinemax, and so forth in their basic cable. Furthermore, most system operators rely on Taiwan's many convenience stores, such as 7-11, to collect subscribers' monthly fees. It is possible that this study found no significant differences among the three market types in terms of subscribers' customer service satisfaction because subscribers had little interaction with the customer service personnel (Li, 2004; Liu, Li, & Chen, 2005). The second possible explanation for this unexpected finding stems from our interviews in which we discovered that all of Taiwan's cable television systems have adopted a standardized procedure for their handling of customer service issues. This procedure has been proved to be very successful in other service-oriented industries. Therefore, this study discovered that market competition was not a good predictor of subscribers' satisfaction regarding customer service because system operators' approaches to the handling of customer service were very similar to each other.

The finding that competition did not have a significant effect on subscribers' satisfaction regarding community service was unexpected, and a possible explanation is as follows. Cable television existed in Taiwan for more than 20 years before it was legalized in 1993, when the governing organization (the GIO) gave temporary licenses to all system operators; the GIO asked them to apply for formal licenses within a certain number of years. According to the criteria set up by the GIO, one requirement that a system operator had to meet to obtain a formal license was proof of the system operator's involvement in community service. Therefore, all system operators made great efforts to get involved in community service. After the government issued all formal licenses around 2000, system operators became much less involved in community service, and they also indicated in our interviews that the most important thing for them was to satisfy their subscribers and that their subscribers did not regard community service as essential.

This view is also confirmed by a study by Liu, Li, Chen, Shen, & Liu (2003), who conducted several focus groups and intensive interviews with subscribers to understand the factors that influenced subscribers' satisfaction with cable television. Their study showed that most subscribers in Taiwan (a) regarded cable television as part of their lives, and (b) thus attached importance to uninterrupted cable viewing. However, few subscribers expected system operators to perform community service, and the absence of this expectation may explain

why competition did not have a significant effect on the subscribers' satisfaction with community service.

The non-competitive duopolistic market was in the franchise areas where two system operators belonging to the same MSO were competing with each other. This type of market competition was, in fact, not real competition; thus, this study expected that the non-competitive duopolistic market should have had a significantly lower level of subscribers' satisfaction than had the competitive duopolistic market. However, this study found that the non-competitive duopolistic market performed as well as the competitive duopolistic market did in terms of subscribers' satisfaction regarding program service, system reliability, and overall satisfaction.

The possible explanation for this unexpected finding is that all the system operators in the non-competitive duopolistic market belonged to one of the four MSOs. According to the managerial revolution theory, corporate media organizations have a greater scale of economy, better management, and more human resources than non-corporate media organizations have; thus, the former will be able to achieve better quality in their products and superior growth of their organizations than will the latter (Demers, 1996; Demers & Merskin, 2000). Furthermore, all MSOs in Taiwan were interested in providing various telecommunication services by utilizing their cable television infrastructure, were thus offering good-quality cable television service to their subscribers and were hoping therein that this service would attract subscribers to advanced services (Liu et al., 2003). Therefore, it is possible that the system operators belonging to MSOs were able to perform well even without market competition. Future studies should try to clarify this issue by comparing the performance of the system operators belonging to MSOs with that of independent system operators.

Competition and Organizational Efficiency

The second hypothesis states that the organizational efficiency of cable television systems will be higher in the franchise areas where competition exists than in the areas where no competition exists. The data analysis shows that the competitive duopolistic and the non-competitive duopolistic markets did not differ very much from each other regarding net-profit rate means, but that each of the two markets had much higher net-profit rate means than had the monopolistic market. Moreover, this study found that the competitive duopolistic market had a much higher penetration rate than either the non-competitive duopolistic market or the monopolistic markets. Therefore, the findings support the prediction of H2.

This study found that when there was more than one system operator in the market, system operators were able to achieve better net-profit rates and that people in this market were more likely to subscribe to cable television. This

finding is counterintuitive to predictions of economic theory, and the explanation for this finding might be that both the non-competitive duopolistic markets and the competitive duopolistic markets were located in Taiwan's two largest cities (Taipei and Kaohsiung) that are regarded by system operators as the most profitable cable television markets because they are the most densely populated cities and have higher family incomes than most other markets in Taiwan.

In addition, the data in Table 4 show that competition only accounts for approximately 1.3% variance of the net-profit rates of system operators. Hence, it is possible that these markets had much higher profit margins than the monopolistic markets and thus the existence of competition did not decrease their profit margins. Furthermore, this study employed only one year of the net-profit rates of system operators, a figure that may not be reliable. To further examine the relation between competition and profit margins, future studies should use, as an indicator, 10-year or 5-year data for system operators' net-profit rates.

This study also discovered that the net-profit rates of cable television systems were positively correlated with the number of locally produced programs, but were negatively correlated with the number of money-making channels. These findings indicate that as cable television systems were more profitable, (a) they were more likely to produce more local programs that are part of the program service offered by system operators, and (b) they put in their systems fewer money-making channels that are regarded by most scholars as trash channels (Liu et al., 2003). Therefore, the net-profit rate of a cable television system should be related with the quality of the cable television system's program service.

Competition and Actual Customer Services

The third hypothesis states that actual customer services in relation to cable television systems will be better in the franchise areas where competition exists than in the areas where no competition exists. The analysis shows that market competition did not have a significant effect on monthly subscription fees or on the three types of customer service. Hence, the findings did not support the prediction of H3.

The finding that market competition did not have a significant effect on monthly subscription fees or on the three types of customer service was unexpected, and two possible explanations for this finding are as follows: First, a revision of Taiwan's Cable Television Law in 1999 placed a cap on the monthly cable fee, limiting it to NT$600 (about U.S. $18), so that the highest and the lowest monthly cable television fees in Taiwan differ by less than NT$100 (about U.S. $3). This fact may explain why competition did not affect monthly subscription fees because not many differences can be made in terms of this variable (Liu et al., 2005). Second, the finding that the three market types did

not differ from each other in terms of local programs, survey frequency, and problem-resolution duration was not expected in the study. The data from our interviews indicated that most systems produced their own local news and local programs, but the differences appeared to lie more in program quality than in program quantity. When interviewed, system operators usually exaggerated the quality of their services to subscribers regarding problem-resolution duration or the frequency of customer surveys. Moreover, most cable television systems now have a channel capacity of around 80 channels, but there are only about 50 popular channels available in Taiwan.

Hence, system operators have tried to integrate as many channels as possible into their systems but have had relatively few channels from which to choose. These two facts may explain why competition did not have a significant effect on the three types of customer service. To more accurately measure actual customer service, future studies should focus on three types of actual customer service—local news, local programs, and problem-resolution duration—and should place added emphasis on the quality of the programs and how customer service actually operates.

CONCLUSION

Using the SCP model, this study examined the relation between market competition and the media performance of Taiwan's cable television industry. Three dimensions—subscribers' satisfaction, organizational efficiency, and actual customer services—were used to define the media performance of cable television systems. The findings generally support a positive competition–performance relation, which is congruent with most previous studies. In particular, our findings confirm the idea that there exists a positive competition–performance relation in a market with a moderate degree of competition (Cuilenburg, 1999; Van der Wurff, 2004; Van der Wurff & Cuilenburg, 2001).

However, our findings were a little different from those of Li (2004), whose study dates only 1 year prior to ours. In Li's (2004) study, she discovered that the non-competitive duopolistic market had the lowest means among the three types of market in terms of subscribers' satisfaction regarding system reliability, program quality, community service, and overall satisfaction. However, this study discovered that the non-competitive duopolistic market raised its performance level to that of the competitive market, and that the non-competitive duopolistic market performed better than the monopolistic market did. A possible explanation is that system operators have been facing more competition in the past year. Several Internet service providers, including the largest telecommunications company, Chung Hwa Telecom., have been offering video services to their subscribers. Chung Hwa Telecom. has the greatest number of Internet

subscribers in Taiwan, and only recently in 2003 obtained a license to offer its Internet subscribers video services on a pay-per-view basis, which system operators regard as a great threat to their survival (Liu et al., 2005). The performance improvements that the non-competitive duopolistic market has experienced are perhaps due to the competition arising from the Internet service providers.

Another possible explanation is that although the two system operators in a non-competitive duopolistic market belonged to the same MSO, there still existed competition between them because at the time this study was conducted, MSOs, instead of owning 100%, owned 55% to 75% of the two system operators in all the non-competitive duopolistic markets. Therefore, the owners of the two systems in a non-competitive duopolistic market differed a little bit from each other.

As with all research, this study has limitations. First, the adjusted R^2 for the regression equations are all small. Not much of the variance in the dependent variables was explained by the equations. This probably reflects the limited range of the scales used to measure the independent variables. Regression analysis assumes either dummy variables or at least interval data with a large number of intervals. In addition, this is a cross-sectional study with data from 1 year. Another possibility is that market structure does not play a large role in determining performance in Taiwan cable markets because of idiosyncratic characteristics of these markets. In addition, two of the four survey factors had alphas under .7, which indicates the presence of higher measurement error in the scales than we would like. Future studies of the Taiwan cable industry should concentrate on developing scales with larger numbers of intervals, on improving reliability of the scales with low alphas, and on using data from more than 1 year.

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