

Chapter 2

New Media, Market Competition, and Media Diversity: An Examination of Taiwan's Terrestrial TV Market from 1986 to 2002

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2.1 Introduction

Taiwan's TV market was under rigid regulation from the 1970s to early 1990s, with only three TV stations dominating the market. But since the lifting of martial law in 1988, the market has been gone through a great transformation. Three changes have significantly affected the television landscape in Taiwan, two of which are related to the development of satellite technologies. The earliest change came with the opening of five satellite television channels in Asia that were the five Star TV channels in Asia. Star TV, based in Hong Kong, was initially a joint venture of Hong Kong's Hutchison Whampoa conglomerate and its chairman Ka-shing Li, but it was then sold to Rupert Murdoch's News Corporation (Chan, 1994). Star TV launched its free TV service in October 1991, with one channel broadcasting in Mandarin Chinese. Star TV's Chinese channel then became very popular in Taiwan, because many people had long been unsatisfied with the programs offered by the three terrestrial TV stations.

Due to the rapid development of satellite technologies, people in Taiwan were able to view these five Star channels by using a small antenna. In particular, Star TV's Chinese channel programmed many Japanese dramas that became the most popular programs in Taiwan. However, cable TV was not legalized in Taiwan, and thus Star TV was not a strong competitor to the three TV stations. The fiercest competition came when satellite signals could legally enter homes after cable TV

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was legalized in 1993. The development of satellite technologies has brought many satellite television channels into Taiwan's market, which could be easily received by setting up small antennas. This situation forced the government to open up the cable television market by legalizing cable TV in 1993. These satellite TV channels not only ended Taiwan's TV oligopoly but also brought strong competition to the three TV stations, which was evidenced by the decreasing audience shares of the three TV stations after 1993 (Magazine, 2004). Another change in Taiwan's TV market was the establishment of a fourth terrestrial TV station in June of 1997. Competition from satellite TV is not so directly threatening to the three TV stations because cable TV had an approximate 75% penetration rate at that time, and many advertisers still preferred to have their ads on the three older TV stations. However, the fourth TV station was a strong competitor to the three older stations because it directly shared advertising income with them (Li & Lee, 2010).

These changes in Taiwan's TV market structure offer a good opportunity for researchers to investigate the relationship between competition and media performance. This study adopted the structure-conduct-performance (SCP) model to investigate this issue.

2.2 Literature Review

2.2.1 *SCP Model*

The structure-conduct-performance (SCP) model is one of the several models from industrial organization theory that researchers use to understand the relationships among the structure, conduct, and performance of markets. The SCP model is often used by researchers to explain how firms behave under different market structures that, in turn, affect market performance. Because the SCP paradigm received a great deal of scholarly attention in the 1970s, it also became the target of various criticisms that mainly centered on two issues. First, the new industrial organization (IO) economists believe that the relationships among structure, conduct, and performance should be interactive in a reciprocal sense within a market, rather than being linear and causal. Second, the new IO economists assert that the strategic behaviors of firms exert a much more important influence on performance than does the market structure itself, and thus they believe that the relationship between market structure and performance is weakening (Albarran, 2002: 51–67; Fu, 2003; Van der Wurff, 2002). Though some economists believe that the link between market structure and performance is weakening, other economists argue that market structure is still an important determinant of likely market outcomes or performance. These economists reason that the strategic behaviors of firms depend very much on the conjectures that, regarding their rivals, are based on the characteristics of the market structure, such as rivals' market power. Therefore, the market structure still plays a significant role in determining likely market outcomes

(Young, 2000). Moreover, some market structures are constrained by regulations or policies, and thus not much leverage is allowed for firms' strategic behaviors, under which market structure exerts a critical influence on performance (Wirth & Bloch, 1995; Schejter & Lee, 2007).

2.2.2 Diversity as Media Performance

A firm's market performance is usually evaluated for its ability to meet various goals that are related to organizational efficiency, the quality of media products, or the diversity of mass media. Among the many criteria for defining media performance, diversity is the most frequently used indicator for media performance because it has long been considered a benchmark of societal development. Media diversity is regarded by many scholars as an effective means for preventing undue centralized control and for advancing the quality of social life (McQuail, 1992; Napoli, 1999; Park, 2005).

Media scholars consider diversity as dimensional and several classification schemes were proposed, among which Napoli's (1999) classification is one of the most comprehensive. Napoli (1999) classified media diversity into three types: source diversity, content diversity, and exposure diversity. Source diversity includes ownership diversity of programming/outlet and workforce diversity. Content diversity includes (1) the diversity of program-type formats, (2) the diversity of demographics, that is, the representation of various persons and groups in the media content, and (3) the diversity of idea/viewpoint. Finally, exposure diversity refers to the availability of choices for the audiences including horizontal and vertical diversity.

2.2.3 Market Structure and Media Diversity

Media economists define market structure based on several factors, including seller concentration, barriers to entry, and product differentiation, and they consider seller concentration as the most important factor because it determines much of a market's structure (Albarran, 2002: 51–67; Kranenburg & Hogenbirk, 2006; Leendertse, 2005). Empirical findings regarding the competition–diversity relationship have not been conclusive. Most studies in the literature have found a positive relationship between competition and media diversity (Asai, 2014; Chan-Olmsted, 1996; Galetic, Dabic, & Kiessling, 2016; Gentzkow, Shapiro, & Sinkinson, 2014; Yanich, 2015). For example, McDonald and Lin (2004) showed that the incorporation of new networks into the American television market led to a higher degree of programming diversity. Kunz (2009) found that after the repeal of the financial interest and syndication rules in the USA, the television market became more concentrated and thus, the source diversity in the prime-time television market was greatly

reduced. Lee (2007) discovered that the entrance of a new competitor into Taiwan's newspaper market had a positive effect on overall newspaper diversity. Li and Lee (2010) found that competition from electronic newspapers led to more diverse topics of the three major newspapers in Taiwan, while competition from the fourth newspaper resulted in an opposite effect on news content. Vettehen, Beentjes, Nuijten, and Peeters (2011) investigated competition in Dutch television news from 1990 to 2004 and found that with an increase in competition, television news stations adopted more arousing characteristics to attract their viewers. Gentzkow et al. (2014) examined the ideological diversity in newspapers and found that as the competition increased, newspapers differentiated their political orientations from competitors to attract readers. Therefore, their study found that competition increased ideological diversity in the early twentieth century of the US press. Asai's study (2014) showed that different ownerships and technologies increased the competition in Japan's TV market, which had widened the range of programming choices for the audience.

Though most studies have found a positive relationship between market competition and media diversity, a few studies showed the opposite (Chambers, 2003; Hvitfelt, 1994; Park, 2005). Li and Chiang (2001) and Liu (1997) analyzed the prime-time programs of Taiwan's three TV stations in the 1990s and found that with increased competition, programming diversity gradually declined. Einstein (2004) found that after the financial interest and syndication rules were repealed, the US television industry became more consolidated, but that program diversity actually increased. Aslama, Hellman, and Sauri (2004) found that programming diversity decreased following the entrance of two new television stations into Finland's television market. Park (2005) investigated the competition–diversity relationship in South Korean's TV market and found that diversity declined from 1989 to 2002 when competition increased.

Still, a few studies did not find any evidence of a relationship between market competition and media diversity or came up with mixed results. For example, Van der Wurff and Cuilenburg (2001) and Van der Wurff (2004) discovered that strong competition was associated with a decrease of programming diversity in the Dutch television market, while a moderate degree of competition showed an opposite effect. Nord (2013) found that a decrease in newspaper competition led to a reduced coverage of local news, but at the same time, a decrease in competition resulted in a higher degree of diversity of local issues.

2.2.4 Research Hypotheses

Though most studies show a positive relationship, past studies regarding the competition–performance relationship have tended to be mixed. Those studies in the literature that indicate a negative competition–performance relationship can be classified into three types: (1) those that examined the competition–performance relationship in the popular music industry (Bielby & Bielby, 2003; Leender, Van

Telgen, Gemser, & Van der Wurff, 2005), and discovered that organizational factors rather than market competition affected music diversity; (2) those that investigated highly competitive markets and moderately competitive markets, and found that the latter resulted in better media performance (Van der Wurff & Cuilenburg, 2001; Van der Wurff, 2004, 2005); (3) those that analyzed inter-media competition and showed that competition was associated with less diversity in terms of media products. For example, Lin (1995), Li and Chiang (2001) and Liu (1997) each investigated the competition from cable television on the diversity of terrestrial television stations and found the existence of a negative competition–performance relationship. These findings are congruent with some scholars’ viewpoints that intra-media competition causes existing firms to differentiate from one another, which results in an increase in total market diversity, while inter-media competition leads firms to be more focused on their products to maintain their market shares, which results in reduced media diversity (Lee, 2007; McDonald & Lin, 2004; Picard, 2002).

The purpose of the study is to examine the competition–diversity relationship in Taiwan’s television market from 1986 to 2002. This study divided the 17 years into four periods with the first period with an oligopolistic market structure, the second period with minor competition, the third period with strong inter-media competition, and the fourth period with intra-media competition.

Based on the literature review above, three key issues should be pointed out; first of all, the terrestrial television industry in Taiwan did not have the organizational factors like those in the popular music industry that were able to increase music diversity. Past studies show that large record companies gave local companies sufficient freedom in the manufacturing of popular songs when acquiring small local companies, and thus a higher degree of concentration resulted in higher diversity in the popular music industry (Leender et al., 2005). Secondly, past studies show that low to moderate degrees of competition led to higher media diversity, while a high degree of competition had an opposite effect (Van der Wurff & Cuilenburg, 2001; Van der Wurff, 2004, 2005); thirdly, past studies also show that inter-media competition resulted in lower media diversity, and intra-media competition led to higher media diversity. Based on the literature review, this study develops the following three hypotheses:

H1: Media diversity increased as minor competition (1991–1993) entered the market.

H2: Media diversity decreased as strong inter-media competition (1994–1997) entered the market.

H3: Media diversity increased as intra-media competition (1998–2002) entered the market.

2.3 Research Methodology

2.3.1 Market Competition

One major variable of this study is market competition. There are three critical points at which significant changes in competition occurred in Taiwan's television market. The first critical point is the year, 1991, when Taiwan's TV oligopoly ended. The second critical point is the year, 1994, when Taiwan's cable television was legalized in December of 1993. The third critical point is the year, 1998, when a fourth terrestrial TV station was established in June of 1997. Using the three critical points as the basis, this study divided the years from 1986 to 2002 into four periods. Furthermore, to ensure the definition of competition is accurate, this study also collected secondary data regarding advertising incomes for television channels, to calculate the Herfindahl-Hirschman Index (HHI), a commonly adopted method of measuring market concentration, for Taiwan's television industry from 1986 to 2002. According to Hoskins, McFadyen, and Finn (2004), highly concentrated markets are those that have an HHI level of more than 1800, moderately concentrated markets are those that have HHI levels ranging from 1000 to 1800, and highly competitive markets are those that have HHI levels of less than 1000. Based on the two sets of data, the four periods are defined as the following: (1) the period with an oligopolistic market structure; this period is from 1986 to 1990, during which Taiwan's television market was still in an oligopolistic market structure and the three television stations had not encountered any significant competition except among themselves. The data in Appendix 1 show that the HHIs in the first period were quite stable and close to 3500, indicating a highly concentrated market. (2) The period with minor competition; this period is from 1991 to 1993, during which Star TV's Chinese channel became popular in Taiwan, but its signals could not legally enter homes by way of cable. During this period, there was competition in Taiwan's market, but the competition was not strong and direct, which was reflected by the HHIs in the second period that show a slight decline from 1991 to 1993 (from 3328 to 3270). (3) The period with a strong degree of inter-media competition; this period is from 1994 to 1997, during which Taiwan's television market went through a great transformation, from the market being dominated by three stations to more than 60 cable channels scrambling for the attention of six million households. The data in Appendix 1 demonstrate that there is a steep decline of HHIs from 1994 to 1997 (from 3111 to 1585), indicating a highly competitive period. (4) The period with intra-media competition; this period is from 1998 to 2002, during which in addition to the more than 60 cable channels, Taiwan's three terrestrial stations encountered competition from the fourth terrestrial station, FTV. The data in Appendix 1 also show that there is a gradual decline of HHIs in the fourth period (from 1535 to 1180).

2.3.2 *Media Diversity*

The dependent variable of the study is media diversity, which was measured by four methods. The first method was to measure vertical programming diversity, that is, the degree of programming concentration in a few types of programs (Litman, 1979). This study counted the number of different program types shown by the terrestrial stations and employed Simpson's D to calculate vertical programming diversity (McDonald & Lin, 2004). Litman (1979) calculated vertical programming diversity by using the Herfindahl index of concentration, which sums up the squared shares of each program type, and where a lower Herfindahl index indicates a higher programming diversity. The calculation of Simpson's D is very similar to the Herfindahl index of concentration, except that researchers use 1 to minus the Herfindahl index to come up with the value of Simpson's $D = 1 - \sum_{i=1}^k \hat{P}_i^2$, and thus a higher Simpson's D indicates a higher vertical programming diversity.

The second method was to measure the horizontal diversity, which calculates the number of options available to viewers in any specific time slot. According to Litman (1979), measuring both horizontal and vertical diversity allows researchers to obtain a more accurate picture of programming diversity. Using a half-hour as one unit, this study analyzed horizontal diversity of the prime-time programs offered by Taiwan's terrestrial television stations.

The third method for defining media diversity was to calculate source diversity of the prime-time dramas. Prime-time dramas have been the most expensive program type for Taiwan's terrestrial television stations, which usually schedule two dramas during the weekday, with one at 8 p.m. and another at 10 p.m. Furthermore, Taiwan's terrestrial television stations invest most of their resources in the production of the prime-time dramas, and they also gain a greater portion of advertising income from these dramas. Therefore, analyzing the source diversity of the prime-time dramas allows researchers to better understand Taiwan's terrestrial television media diversity. This study examined the source diversity of the prime-time dramas, calculated by using Simpson's D. This study classified all of the prime-time dramas into seven sources: (1) Taiwan's locally produced dramas, (2) Korean dramas, (3) Japanese dramas, (4) China's dramas, (5) Hong Kong's dramas, (6) the dramas from the USA, and (7) others.

The fourth method for defining media diversity was to analyze content diversity, measured by taking the number of prime-time dramas produced by the terrestrial television stations and dividing by the number of different main characters in these dramas, a higher number indicating a higher degree of diversity. This study took into account the four main characters in each drama, including two actors and two actresses, and used secondary data, such as news reports, TV guides, and magazine reports, to identify the main characters in each prime-time drama, during the 17-year period. This study only analyzed those prime-time dramas that were produced in Taiwan.

2.3.3 *Sampling of Programming Data*

Using the three critical years, 1991, 1994, and 1998, as the basis, this study selected a total of 17 years (from 1986 to 2002) for examination. The sampling proceeded in two stages: firstly, this study divided each year into four seasons, from each of which we randomly chose one month, and then we randomly selected one week from the month chosen. If the selected week had a special holiday, such as the lunar New Year, then the following week would be used to ensure that the programs selected were representative of normal programming. With four weeks selected from each of the 17 years, this study included 68 weeks of the three older stations' programs and 22 weeks of the fourth station's programs. Using a program as one unit of analysis, the final sample of the study included 44,432 programs.

According to Litman, Hasegawa, Shrikhande, and Barbatsis (1994), the validity of the coding for TV content analysis is greatly influenced by the selection of program categories, and thus it is crucial to choose the categories that accurately represent the programs shown. This study referred to several studies that conducted either in the USA or in Taiwan (Lin, 1995; Li & Chiang, 2001), and developed twenty program categories for TV content analysis: (1) news reports, (2) news magazines, (3) talk/discussion, (4) educational programs, (5) women's programs, (6) culture/artistic, (7) sports, (8) children's programs, (9) cartoon, (10) movies, (11) English series, (12) variety, (13) contests, (14) serial dramas, (15) idol dramas, (16) dramas, (17) religious, (18) quasi-dramas, (19) minority programs, and (20) others.

Taiwan's prime-time television programming begins at 19:00 and ends at 23:00, with the 8:00–9:30 p.m. slot holding the highest number of viewers. Taiwan's terrestrial television stations invest their most valuable resources in this slot, which has the most expensive advertising prices. All the terrestrial television stations have offered the same type of program, serial dramas, at this time slot for more than 30 years, and these serial dramas are also called "8 o'clock dramas." To better understand the competitive situation among Taiwan's terrestrial television stations during this popular slot, this study further classified 8 o'clock dramas into 22 categories: (1) modern comedy, (2) modern love story, (3) country story, (4) ancient story, (5) late Chi dynasty story, (6) martial arts story, (7) history, (8) ancient comedy, (9) crime/police/detective, (10) school story, (11) imported series, such as Japanese series, (12) ancient love story, (13) post Chi dynasty story, (14) idol dramas, (15) quasi-dramas, (16) situation comedy, (17) biography, (18) mysterious story, (19) dramas regarding military academy, (20) life-inspiring story, (21) puppet shows, and (22) others.

2.3.4 *Inter-coder Reliability*

This study has two sets of program categories; one is for the overall programming of the television stations, and the other is for 8 o'clock dramas. Three research

assistants were trained to do the coding for the overall programming, and they were paired into two. Each of the 44,432 programs was coded by two coders separately, and the pi index ranged from 0.979 to 0.986 with a mean of 0.983. The pi index was developed by Scott (1955) and is a good measurement of inter-coder reliability because it takes into account the agreement by chance (Krippendorff, 1980). Two research assistants were trained to do the coding for 8 o'clock dramas. After the two coders were trained to have a high degree of consensus regarding the coding of the 22 categories, 10% of the total programs, 301 dramas, were randomly selected for the measurement of inter-coder reliability. The two assistants coded the 301 dramas separately, and the averaged pi index for the two coders is 0.883.

2.4 Research Findings

2.4.1 *Competition and Vertical Programming Diversity*

This study measured four types of vertical programming diversity—total programs, primary prime-time programs (from 19:00 to 21:00), secondary prime-time programs (from 21:00 to 23:00), and 8 o'clock dramas. The Simpson's D indexes are summarized in Figs. 2.1, 2.2, 2.3, 2.4. The data in Figs. 2.1, 2.2, 2.3, 2.4 show that when minor competition entered Taiwan's market (1991–1993), the three stations gradually decreased their vertical diversity for the primary prime-time programs (19:00–21:00) and the 8 o'clock dramas, while the vertical diversity for the secondary prime-time programs (21:00–23:00) and the total programs remained unchanged, following the entrance of minor competition into Taiwan's market. For the period with strong competition (1994–1997), the data in Figs. 2.1, 2.2, 2.3, 2.4 indicate a decrease in two types of vertical diversity, the secondary prime-time programs and the 8 o'clock dramas, while the vertical diversity of the total programs was found to have no change. Furthermore, the four figures show an increase in the vertical diversity of the primary prime-time program. For the period with intra-media competition (1998–2002), this study found that three types of vertical diversity—the primary prime-time programs, the secondary prime-time programs, and the total programs—decreased, but that the vertical diversity of 8 o'clock dramas increased. Furthermore, the dotted lines in Figs. 2.1, 2.2, 2.3, 2.4 are the Simpson's D indexes after taking into account the programs provided by the fourth station. The data in the four figures show that adding the programs of the fourth station did not greatly affect the patterns of the four types of vertical programming diversity.

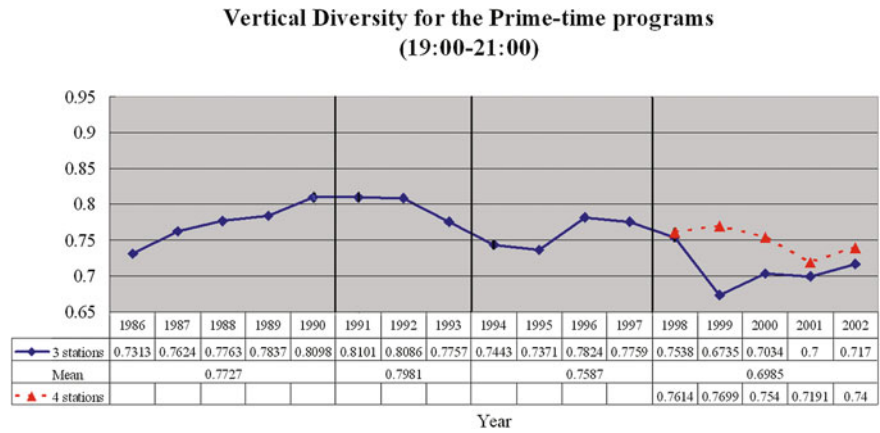


Fig. 2.1 Vertical diversity for the prime-time programs (19:00-21:00)

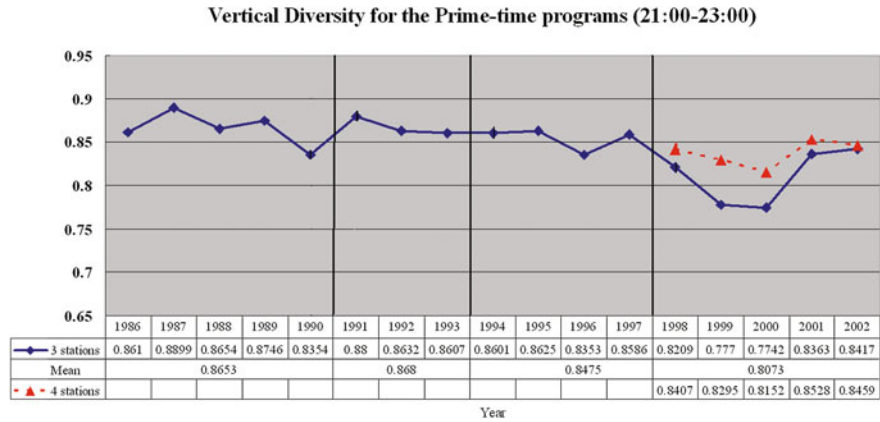


Fig. 2.2 Vertical diversity for the prime-time programs (21:00-23:00)

2.4.2 Competition and Horizontal Programming Diversity

The data regarding the horizontal programming diversity are summarized in Fig. 2.5. The data in Fig. 2.5 show that the horizontal diversity of the prime-time programs gradually declined, following the entrance of minor competition into the market, and remained unchanged after the strong competition entered Taiwan’s market. However, horizontal diversity gradually increased when intra-media competition entered the market.

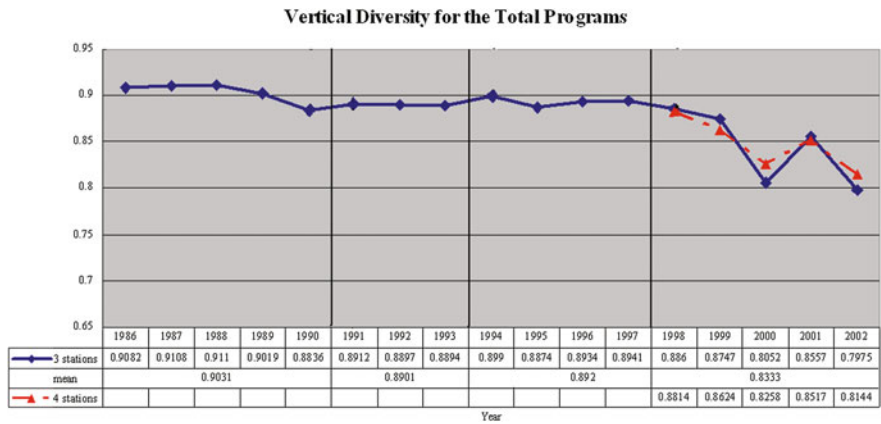


Fig. 2.3 Vertical diversity for the total programs

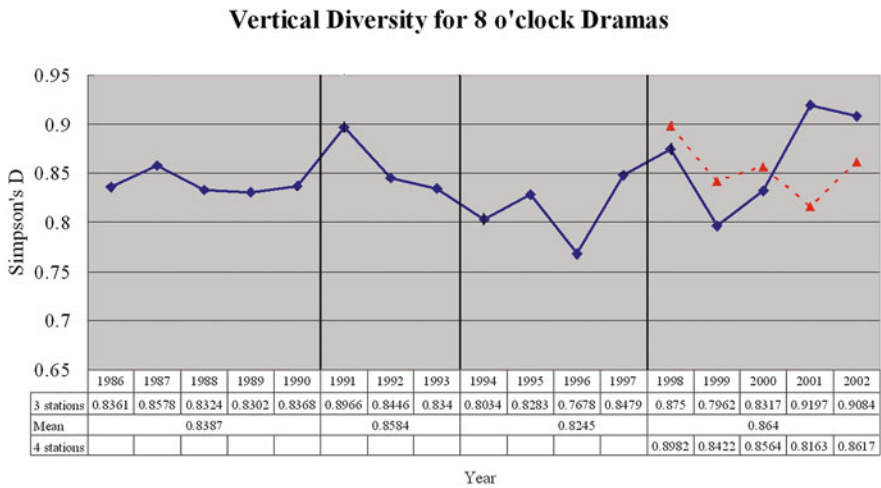


Fig. 2.4 Vertical diversity for 8 O'clock dramas

2.4.3 Competition and Source and Content Diversity

The data regarding source diversity and content diversity are summarized in Figs. 2.6 and 2.7. The data in Fig. 2.6 show that with minor competition (1991–1993) entering Taiwan’s market, the source diversity of the prime-time dramas greatly increased, then gradually decreased to the lowest point of the 17-year period after strong competition (1994–1997) entered the market. Furthermore, the period with intra-media competition (1998–2002) was found to be associated with a gradual increase of the source diversity to the highest point at 2002. For content

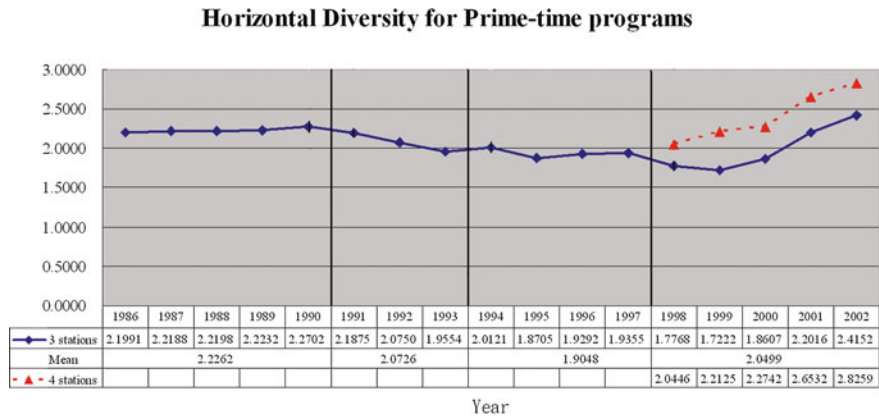


Fig. 2.5 Horizontal diversity for prime-time programs

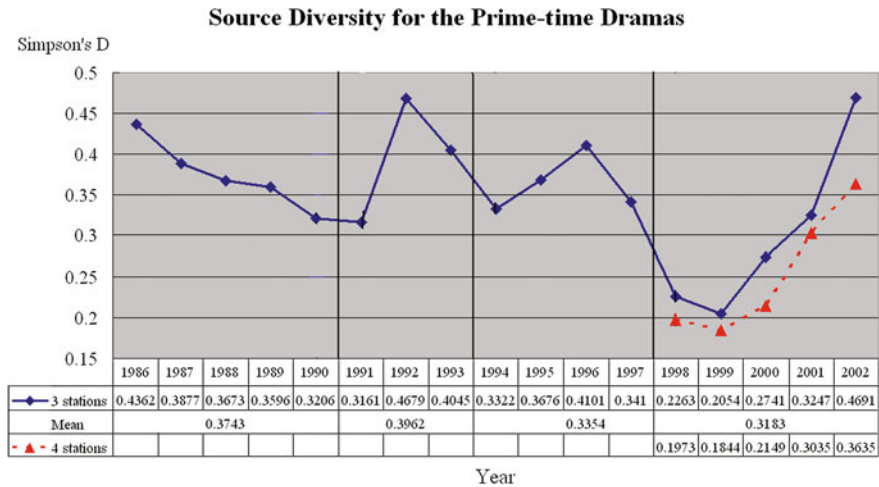


Fig. 2.6 Source diversity for the prime-time dramas

diversity, the data in Fig. 2.7 show that it was positively associated with minor competition, but negatively related to strong competition. Moreover, the content diversity in the period with intra-media competition was discovered to vary greatly, but on the average, the three stations slightly increased their content diversity in this period.

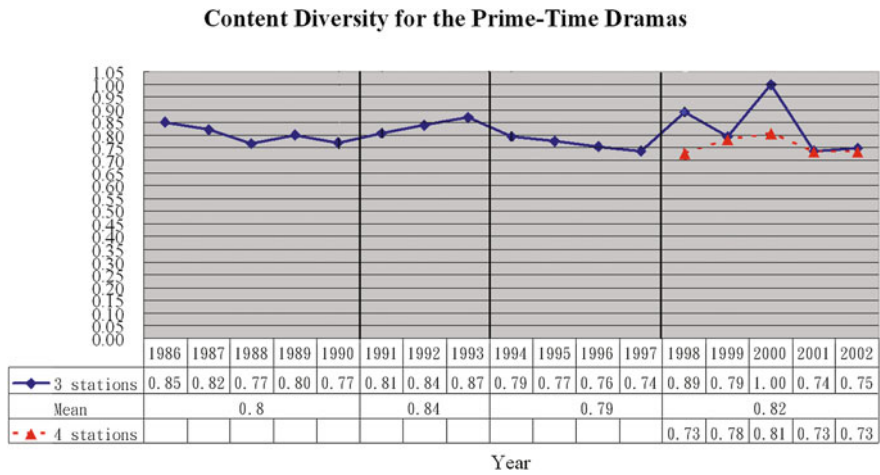


Fig. 2.7 Content diversity for the prime-time dramas

2.4.4 Tests on the Significance of Simpson Ds

This study used seven indicators to measure media diversity, five of which are Simpson D indexes that can be tested for their significance. The five indicators are for the primary prime-time program, secondary prime-time program, total programs, 8 o'clock dramas, and source diversity. This study adopted the formulas developed by McDonald & Lin (2004) to examine whether the differences between Simpson Ds reach a significant level. The data are summarized in Table 2.1, and the data in Table 2.2 are those that included the data of the fourth terrestrial television when calculating Simpson Ds and significance levels.

The data in Table 2.1 indicate that there are five differences between Simpson Ds that reach a significant level; the first significance is the differences between 1997s and 1994s Simpson D for 8 o'clock dramas, the second one is the differences between 2002s and 1998s Simpson D for primary prime-time program, the third one is between 2002s and 1998s Simpson D for secondary prime-time program, the fourth one is between 2002s and 1998s Simpson D for 8 o'clock dramas, and the fifth one is between 2002s and 1998s Simpson D for source diversity. After including the data of the fourth station in the formulas, Table 2.2 shows that there are only two differences between Simpson Ds that reach a significant level; the first significance is the differences between 1997s and 1994s Simpson D for 8 o'clock dramas, and the second is between 2002s and 1998s Simpson D for source diversity.

Table 2.1 Tests on the significance of Simpson Ds (Three Stations)

Year 1991–1993	The variance of Simpson’s D	95% confidence interval	Lower bound	Upper bound	Hypothesis test
Prime-time program (19:00–21:00)	−0.0343	0.0269	−0.0612	−0.0075	Fail
Prime-time program (21:00–23:00)	−0.0194	0.0199	−0.0393	0.0005	Fail
Total programs	−0.0018	0.0060	−0.0078	0.0041	Fail
8 o’clock dramas	−0.0626	0.0607	−0.1233	−0.0019	Fail
Source diversity	0.0884	0.1015	−0.0131	0.1899	Fail
<i>Year 1994–1997</i>					
Prime-time program (19:00–21:00)	0.0095	0.0275	−0.0181	0.0370	Fail
Prime-time program (21:00–23:00)	−0.0393	0.0281	−0.0674	−0.0112	Fail
Total programs	−0.0130	0.0053	−0.0184	−0.0077	Fail
8 o’clock dramas	0.0716	0.0560	0.0157	0.1276	Pass
Source diversity	−0.1059	0.1062	−0.2121	0.0003	Fail
<i>Year 1998–2002</i>					
Prime-time program (19:00–21:00)	0.0436	0.0279	0.0157	0.0715	Pass
Prime-time program (21:00–23:00)	0.0646	0.0372	0.0274	0.1018	Pass
Total programs	−0.0772	0.0095	−0.0867	−0.0678	Fail
8 o’clock dramas	0.1123	0.0448	0.0675	0.1570	Pass
Source diversity	0.2637	0.1072	0.1565	0.3709	Pass

2.5 Discussion

This study employed seven indicators of media diversity to investigate the competition–diversity relationship. To better understand the results, this study summarized all the findings in Table 2.3.

2.5.1 Minor Competition and Media Diversity

The first hypothesis of the study predicts that media diversity would increase in the period from 1991 to 1993 when minor competition entered Taiwan’s television market. Table 2.3 indicates that for the first five indicators, only one indicator—source diversity—show an increase and two indicators—primary prime-time programs and 8 o’clock dramas—show a decrease, while the two indicators—secondary prime-time programs and the total programs—show no change.

Table 2.2 Tests on the significance of Simpson Ds (Four Stations)

Year 1991–1993	The variance of Simpson's D	95% confidence interval	Lower bound	Upper bound	Hypothesis test
Prime-time program (19:00–21:00)	−0.0343	0.0269	−0.0612	−0.0075	Fail
Prime-time program (21:00–23:00)	−0.0194	0.0199	−0.0393	0.0005	Fail
Total programs	−0.0018	0.0060	−0.0078	0.0041	Fail
8 o'clock dramas	−0.0626	0.0607	−0.1233	−0.0019	Fail
Source diversity	0.0884	0.1015	−0.0131	0.1899	Fail
<i>Year 1994–1997</i>					
Prime-time program (19:00–21:00)	0.0171	0.0276	−0.0105	0.0447	Fail
Prime-time program (21:00–23:00)	−0.0195	0.0219	−0.0413	0.0024	Fail
Total programs	−0.0176	0.0051	0.0227	−0.0125	Fail
8 o'clock dramas	0.0948	0.0536	0.0413	0.1484	Pass
Source diversity	−0.1349	0.0988	−0.2337	−0.0361	Fail
<i>Year 1998–2002</i>					
Prime-time program (19:00–21:00)	−0.0297	0.0200	−0.0497	−0.0097	Fail
Prime-time program (21:00–23:00)	0.0204	0.0258	−0.0054	0.0462	Fail
Total programs	−0.0479	0.0078	−0.0558	−0.0401	Fail
8 o'clock dramas	0.0195	0.0314	−0.0119	0.0509	Fail
Source diversity	0.1791	0.0841	0.0950	0.2633	Pass

However, all the five indicators did not reach a significant level. For the remaining two indicators, horizontal diversity shows a decrease, but content diversity shows an increase during this period. Therefore, the prediction of the first hypothesis was not supported by the findings of the study.

This study found that when minor competition entered Taiwan's market, most indicators of the study did not show an increase of diversity, which is incongruent with some of the previous studies. Past studies such as Van der Wurff and Cuilenburg (2001) and Van der Wurff (2004, 2005) found that moderate competition had a positive effect on programming diversity in the Dutch and some European television markets, while strong competition had an opposite effect. A possible explanation for the incongruent findings is that the competition was too minor to have a positive effect on media diversity. The period with minor competition is from 1991 to 1993 when Star TV's Chinese channel was popular in

Table 2.3 Summary of the results for seven indicators

Diversity	Primary prime-time program (19:00–21:00)	Secondary prime-time program (21:00–23:00)	Total programs	8 o'clock dramas	Source diversity	Horizontal diversity	Content diversity
1991	↓	–	–	↓	↑	↓	↑
1994	↑	↓	–	↓*▲	↓	–	↓
1998	↓*	↓*	↓	↑*	↑*▲	↑	↑

*Note**:Indicates that the differences between Simpson Ds reach a significant level when the data of the three stations are taken into account
▲Indicates that the differences between Simpson Ds reach a significant level when the data of the four stations are taken into account

Taiwan, but at that time cable television had not been legalized. The competition from Star TV should be relatively small, and therefore, it did not exert any positive effects on media diversity.

Furthermore, this study found that content diversity of the prime-time programs increased, but horizontal diversity of the prime-time programs decreased as minor competition entered Taiwan's market, indicating that the three stations employed different characters for the prime-time dramas to fortify their competitiveness, but at the same time, they adopted head-to-head strategies to confront one another in the prime-time slots. To sum up, this study found that when encountering minor competition from cable television, the terrestrial television stations slightly increased the diversity of the prime-time programs by increasing their content diversity, but they competed directly with one another in these valuable time slots.

2.5.2 Strong Inter-media Competition and Media Diversity

The second hypothesis predicts that media diversity would decrease in the period from 1994 to 1997, when strong inter-media competition entered Taiwan's market. The data in Table 2.3 show that four indicators demonstrate a decrease of diversity and one indicator shows an increase of diversity in this period, while the remaining two indicator—vertical diversity of the total program and horizontal diversity—shows no change. Moreover, among the first five indicators of media diversity, only one indicator—8 o'clock dramas—reached a significant level. Therefore, the second hypothesis was partially supported.

This study found that four indicators—secondary prime-time programs, 8 o'clock dramas, source diversity, and content diversity—show a decrease of diversity as strong inter-media competition entered Taiwan's television market, which is congruent with past studies, finding that a high degree of competition had a negative effect on media diversity (Lin, 1995; Van der Wurff & Cuilenburg, 2001). These findings are congruent with those studies regarding inter-media competition, showing that when competition came from outside the industry, it had a negative effect on media diversity because inter-media competition caused existing firms to focus on their characteristics as terrestrial television and to differentiate themselves from cable television, during which process the existing firms became more similar with one another (Lee, 2007; Li & Lee, 2010; McDonald & Lin, 2004). It appeared that when strong inter-media competition entered Taiwan's market, the best strategy for the three stations was to duplicate one another's programming, and thus this study found that the indicators of diversity regarding secondary prime-time programs, 8 o'clock dramas, source diversity, and content diversity show a decrease. Therefore, the three stations not only imitated one

another's programming, but they also competed fiercely with one another during this period.

The competitive situation in this period is similar to what Van der Wurff and Cuilenburg (2001) call ruinous competition. Taiwan's three terrestrial television stations of this period were under a ruinous competitive structure. Under this circumstance, instead of experimenting with innovative program ideas, the three stations tried to adopt conservative approaches for programming to maintain their market shares. Hence, imitating one another's successful programming ideas and repeating those program types that had been proven popular in the past were frequently used approaches. Therefore, total diversity decreased under this ruinous competitive market. These findings were congruent with some of the past studies that examined intense market competition and programming diversity (Li & Chiang, 2001; Park, 2005; Van der Wurff & Cuilenburg, 2001).

2.5.3 Intra-media Competition and Media Diversity

The third hypothesis predicts that media diversity would increase in the period from 1998 to 2002 when intra-media competition entered Taiwan's market. The data in Table 2.3 show that when intra-media competition entered Taiwan's market, four of the seven indicators of diversity—vertical diversity of 8 o'clock dramas, source diversity, horizontal diversity of the prime-time programs, and content diversity—show an increase, while three types of vertical diversity—primary prime-time programs, secondary prime-time programs, and total programs—decreased. Furthermore, among the first five indicators, only one indicator—total programs—did not reach a significant level. Therefore, the prediction of the third hypothesis was partially supported.

This study found that when encountering a new competitor, the fourth station, the three older stations tried to increase the vertical diversity of 8 o'clock dramas, vary the sources of the prime-time dramas, and employ different characters for the prime-time dramas in order to fortify their competitiveness. At the same time, they also tried to avoid using head-to-head competition strategies with one another and thus scheduled different types of programs in the prime-time slots. However, the findings that two types of vertical programming diversity decreased indicate that the three stations further narrowed down their prime-time programs.

During this period with intra-media competition, the three stations encountered not only the competition from the fourth station, but also the competition from cable television. Moreover, the HHIs were even lower than those in the previous period, indicating that the degree of competition was stronger than that in the third period. However, this study found that more than half of the seven indicators show an increase of diversity, which confirms McDonald and Lin's viewpoint (2004) that

when competition came from within the industry, media diversity would increase, while when competition came from outside the industry, media diversity decreased. When encountering strong competition from cable television, Taiwan's three stations might have been aware of their limitations as terrestrial television and did not want to compete with the strength of cable television, the bandwidth of channels. Therefore, the three stations gave up the program types that they regarded as their weaknesses and focused on those programs with which they had expertise. During the process in which the three stations tried to differentiate themselves from cable television, the three stations became even more similar to one another, and thus this study found that media diversity decreased in the third period (1994–1997). However, when competition came from the fourth station, the three stations had to not only position themselves differently from one another but also differentiate from the fourth station (McDonald & Lin, 2004; Lee, 2007). Hence this study found that the fourth period (1998–2002) experienced even more intense competition than the previous period, but media diversity increased.

2.6 Conclusions

This study adopted the SCP model as the theoretical framework for an examination of the competition–diversity relationship in Taiwan's terrestrial television market from 1986 to 2002. Two conclusions can be drawn from the findings: (1) when competition came from outside the industry, minor competition did not bring a higher degree of media diversity to the market, while strong competition came with a lower degree of media diversity. (2) When competition came from within the industry, even a strong degree of competition brought a higher degree of media diversity to the market. Furthermore, when taking the fourth terrestrial television into consideration, there still existed a positive competition–diversity relationship because the data in Figs. 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 show that during the period of intra-media competition (1998–2002), three indicators of diversity—8 o'clock dramas, source diversity, and horizontal diversity—show an increase.

This study did not examine the relationship between moderate competition and media diversity when competition came from within the industry. Future studies can be conducted by dividing intra-competition into a high and moderate degrees of competition and examine their effects on media diversity. In general, this study found that market structure did play a significant role in determining likely market outcomes.

Appendix 1



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