SMOKING RESTRICTIONS IN PRIVATE WORKPLACES IN SINGAPORE

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ABSTRACT

This survey aims to determine the number and profile of private workplaces in Singapore which have a smoking restriction policy. The response rate was 43%. Of the companies which responded, 59% had some form of smoking restriction.

Private companies are more likely to have a smoking restriction policy: (a) where smoking poses inherent fire risks, such as those dealing with inflammable chemicals or gases; (b) where smoking poses inherent detrimental effects to the quality of the products, such as those dealing with precision electronic microcomponents, where a smoke-free and dust-free environment is essential; (c) are larger companies; and (d) have strong management support in initiating and enforcing smoking restriction.

Future programmes should give more emphasis to the service industries such as construction, insurance, banking and finance, and smaller companies (with fewer than 100 employees). They should involve the management who play an important role in implementing smoking restriction at their workplace.

Keywords: *smoking restriction, smoking legislation, private companies, workplace smoking restriction policy*

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INTRODUCTION

In Singapore, the government itself has led the way in restricting smoking in the workplace. All government offices were declared smoke-free in 1986. There is, however, no legislation which specifically prohibits workplace smoking in the private sector.

Prior to the advent of the 1986 US Surgeon General's Report on Involuntary Smoking and the National Research Council's Report on Environmental Tobacco Smoke, both of which identified tobacco smoke as a cause of cancer in non-smokers, smoking on the job was widely treated as a *social* issue, not a *health* issue[1]. A report by the National Cancer Institute in the United States noted that many organisations had introduced restrictions on smoking in the workplace primarily because of the risk of fire, explosion, or damage to property and equipment[2].

Smoking in the workplace is now restricted, not only for social or safety reasons alone but also for economic reasons. Many employers are also concerned with the economic effects of smoking-related poor health in terms of medical costs, absenteeism and reduced productivity, and possible litigation from non-smoking employees due to passive smoking.

Information about the health consequences of passive smoking has been accumulating for more than a decade[3]. This has led to a greater awareness among smokers and non-smokers on the health hazards of smoking. The evidence has also provided a strong rationale for the non-smokers to demand smoke-free workplaces, for the management to regulate smoking in the workplace, and for the government to legislate.

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Over half of the countries in the world now provide protection from smoking in public places. Much of this legislation has been enacted since 1985[4]. From 1982 to 1987 Hong Kong enacted legislation which partially banned smoking in cinemas, concert halls, theatres, public lifts, and certain public transport vehicles. In 1992, the government extended the ban to cover all public transport, cinemas, theatres, concert halls, amusement games and entertainment centres[5].

In 1989 the Council of Ministers and Health Ministers of the twelve member states of the European Community adopted a resolution to ban smoking in public places and in premises open to the public, as well as all forms of public transport. Although the resolution provides for the setting up of clearly-defined areas for smokers, it recognizes that the right to health of non-smokers must prevail over the right of smokers to smoke[6].

Although few countries originally extended this protection to workplaces[7], at least one-fifth of countries now also provide some form of workplace smoking restriction, and the number has been increasing steadily[8].

In some countries, the increase has been dramatic. For example, the prevalence of workplace smoking control policies in the United States has increased from 16% of companies in 1980[9] to 85% in 1991[10]. The Australian Public Service Board declared all government offices smoke-free in 1988, while in Canada, smoking was banned in all civil service offices in 1989[11]. Costa Rica, Cuba, Denmark, Iceland and Israel have enacted legislative measures restricting smoking at the worksite. In New Zealand, Norway and Sweden such measures have been extended to cover private offices, factories, stores and businesses[2].

Over the past twenty years, the government in Singapore has also imposed increasing restrictions on smoking in public places. Smoking was banned in cinemas and theatres (October 1970), in lifts and public transport vehicles (1973), in hospitals, maternity wards, clinics and nursing homes, indoor roller-skating rinks and roller discotheques, and fast-food restaurants (1988). In November 1989, such legislation was extended to snooker parlours, fitness centres, air-conditioned restaurants, halls and functions rooms accessible to the public, public libraries and museums, and air-conditioned department stores and supermarkets. In April 1992, the non-smoking areas were further extended to hairdressing saloons, barber shops, banking halls, private and school buses, and taxis. In addition the revised Act made enforcement the responsibility of the management[12].

The main aim of this survey then was to determine the number of workplaces in the private sector in Singapore which had adopted a smoking restriction policy. The survey also sought to identify the factors influencing the adoption of such a policy, and methods of enforcement.

METHOD

Between 6 March to 15 April 1991 the Training and Health Education Department conducted a survey of the private sector on the prevalence of smoking restriction.

The survey was carried out by means of a self-administered two-page questionnaire which was sent to all registered companies, factories, offices and workshops obtained from a list provided by the Ministry of Labour in March 1991. The completed questionnaires were returned via telefax or mail.

One thousand one hundred and sixty-eight (1,168) out of a total of 2,723 questionnaires were returned, giving a response rate of 43%.

The data was entered and analysed using a DBase IV Programme.

RESULTS

Profile of respondents

More than half of the respondents (57.0%) comprised companies or workplaces with fewer than 100 employees. 32.2% had between 100 to 500 employees and 9.9% had more than 500 employees (Table I).

The top four business types among the respondents were companies dealing with commerce and services (22.9%), electronic products (12.9%), metal manufacturing and shipyard services (12.4%) and finance and banking (8.8%) (Table I). The different business types were broadly classified into Manufacturing, Service and Others.

Companies in Manufacturing are more likely than Service and Others to deal with inflammable chemicals/gases, food and precision electronic microcomputers, where smoking poses inherent fire risks and detrimental effects to the products.

In terms of workforce size, more businesses dealing with hotel and catering (81.3%), electronic products and components (65.6%), and petroleum products and refineries (61.1%) had 100 or more employees. The rest of the businesses were smaller and had fewer than 100 employees. They were mainly dealing with food and beverage, paints and pharmaceuticals, industrial chemicals and gases, light manufacturing, PVC manufacturing and construction (Table I).

Smoking restriction

Fifty-nine percent of the 1,168 companies which responded to the survey had some form of smoking restriction in their workplace.

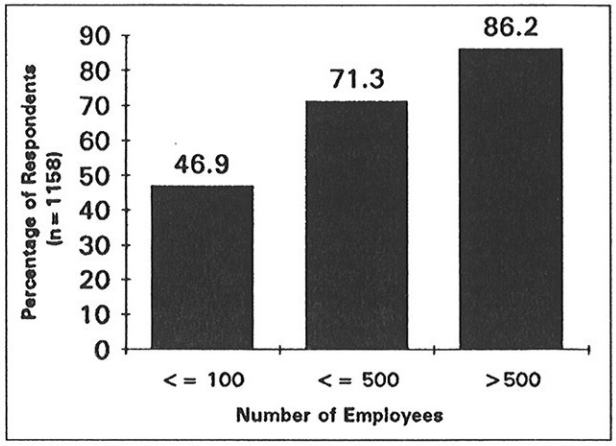
Workforce size

Companies with larger workforce size are more likely to have smoking restrictions overall and also within each industry.

Fig 1 shows that 86.2% of the companies with more than 500 employees while 71.3% of those employing between 100 to 500 had some form of smoking restriction. Only 46.9% of the smaller workplaces (fewer than 100 employees) reported that they had some form of smoking restriction.

Table II shows that when broken down into business type, the same pattern was observed in both the Manufacturing, Service and Others. The prevalence of smoking restriction was higher among those with 100 or more employees.

Fig 1 – Prevalence of smoking restriction by workforce size



Business Type

Companies in Manufacturing, by nature of their business types are more likely to have smoking restrictions compared to companies in Service and Others (Table II).

An exception is the hotel and catering services in which 93.8% had some form of smoking restriction. It is important to note that several areas in the hotels such as restaurants, fitness centres and lifts are covered by existing legislations. This will explain the higher prevalence of smoking restriction within the industry.

The top five industries ranked by prevalence of smoking restriction are those dealing with industrial chemicals and gases (88.2%), petroleum refineries and products (77.8%), electronic products and components (77.5%), paints, pharmaceutical and other chemical products (71.0%), and PVC manufacturing (68.8%) in that order.

The food and beverage industry was also fairly likely to adopt smoking restriction measures (67.7%). This was followed by metal manufacturing and shipyard services (63.4%), light maufacturing (57.1%), textiles and garments (57.1%), commerce and services (51.5%), and mechanical engineering and electrical maintenance (50.0%).

Workplaces that were least likely to have some form of smoking restriction were mainly those in Service and Others, such as the construction (21.7%), finance and banking (42.7%), insurance (44.4%), and other miscellaneous businesses (47.8%).

Air-conditioning

A workplace that is air-conditioned does not necessarily make it more likely to have smoking restriction (Table III).

However for light manufacturing and hotel/catering, the presence of air-conditioning appears to be a positive factor for smoking restriction. Ninety percent of companies in light manufacturing which have smoking restriction are air-conditioned, compared to only 73.7% of non air-conditioned companies which have the smoking restriction. All the companies in hotel/catering which are air-conditioned have smoking restriction compared to only 50% among non air-conditioned companies.

Extent of smoking restriction

Among those companies which reported having smoking restrictions (Fig 2), 89.5% extended such coverage to the work areas, 73.7% to offices, 39.9% to staff rooms, 38.2% to canteens, 36.6% along corridors, and 31.1% in the toilets. Only 28.6% of companies imposed restriction in their recreation rooms.

Table I – Profile of respondents by business type and by workforce size

Business Type	No. of Employees								Total	
	< 100		100-500		>500		Unknown			
	No.	%	No.	%	No.	%	No.	%	No.	%
Manufacturing										
1) Food and beverage	68	73.1	21	22.6	4	4.3	0	0.0	93	100.0
2) Electronic products and components	50	33.1	56	37.1	43	28.5	2	1.3	151	100.0
3) Paint/pharmaceuticals and other chemical products	21	67.7	9	29.0	1	3.2	0	0.0	31	100.0
4) Industrial chemical and gases	12	70.6	5	29.4	0	0.0	0	0.0	17	100.0
5) Petroleum refineries and products	7	38.9	7	38.9	4	22.2	0	0.0	18	100.0
6) Light manufacturing	50	71.4	17	24.3	3	4.3	0	0.0	70	100.0
7) Metal manufacturing and shipyard services	73	50.3	54	37.2	16	11.0	2	1.4	145	100.0
8) PVC manufacturing	23	71.9	8	25.0	1	3.1	0	0.0	32	100.0
9) M&E maintenance/products	38	67.9	12	21.4	6	10.7	0	0.0	56	100.0
10) Textiles and garments	23	54.8	17	40.5	2	4.8	0	0.0	42	100.0
Service										
1) Finance and banking	60	58.3	35	34.0	7	6.8	1	1.0	103	100.0
2) Commerce and services	156	58.2	97	36.2	13	4.9	2	0.7	268	100.0
3) Construction	38	82.6	7	15.2	1	2.2	0	0.0	46	100.0
4) Hotel/catering services	4	12.5	15	46.9	11	34.4	2	6.3	32	100.0
5) Insurance	12	66.7	4	22.2	1	5.6	1	5.6	18	100.0
Others										
1) Others	31	67.4	12	26.1	3	6.5	0	0.0	46	100.0
Total (n - 1168)	666	57.0	376	32.2	116	9.9	10	0.9	1168	100.0

Table II – Prevalence of smoking restriction by business type and by workforce size

Business Type	No. of Employees								Total (N)	
	< 100 (n_1)		100-500 (n_2)		>500 (n_3)		Unknown (n_4)			
	No.	% n_1	No.	% n_2	No.	% n_3	No.	% n_4	No.	%(N)
Manufacturing										
1) Food and beverage	46	67.6	14	66.7	3	75.0	0	0.0	63	67.7
2) Electronic products and components	29	58.0	47	83.9	39	90.7	2	100.0	117	77.5
3) Paint/pharmaceuticals and other chemical products	12	57.1	9	100.0	1	100.0	0	0.0	22	71.0
4) Industrial chemical and gases	10	83.3	5	100.0	0	0.0	0	0.0	15	88.2
5) Petroleum refineries and products	5	71.4	5	100.0	4	100.0	0	0.0	14	77.8
6) Light manufacturing	22	44.0	15	88.2	3	100.0	0	0.0	40	57.1
7) Metal manufacturing and shipyard services	35	47.9	40	74.1	15	93.8	2	100.0	92	63.4
8) PVC manufacturing	14	60.9	7	87.5	1	100.0	0	0.0	22	68.8
9) M&E maintenance/products	14	36.8	9	75.0	5	83.3	0	0.0	28	50.0
10) Textiles and garments	10	43.5	12	70.6	2	100.0	0	0.0	24	57.1
Service										
1) Finance and banking	24	40.0	17	48.6	3	42.9	0	0.0	44	42.7
2) Commerce and services	66	42.3	59	60.8	11	84.6	2	100.0	138	51.5
3) Construction	7	19.4	3	42.9	0	0.0	0	0.0	10	21.7
4) Hotel/catering services	3	75.0	15	100.0	10	90.9	2	100.0	30	93.8
5) Insurance	4	33.3	2	50.0	1	100.0	1	0.0	8	44.4
Others										
1) Others	11	35.5	9	75.0	2	66.7	0	0.0	22	47.8
Total With Smoking Restriction	312	46.9	268	71.3	100	86.2	9	90.0	689	59.0

n_1, n_2, n_3, n_4 = total number in each business type by size of workforce
N = total number in each business type

Fig 2 – Prevalence of smoking restriction in premises

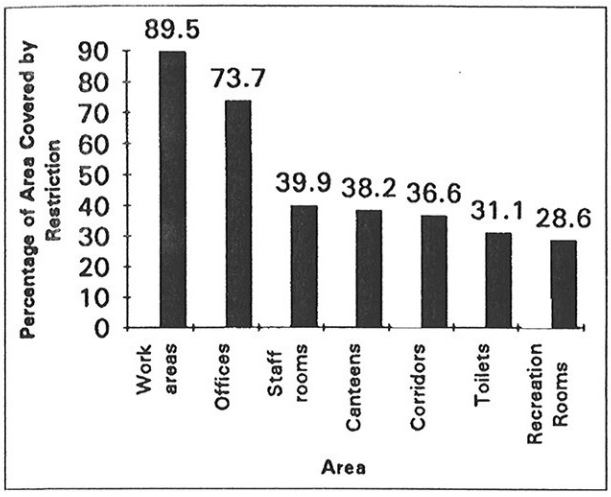
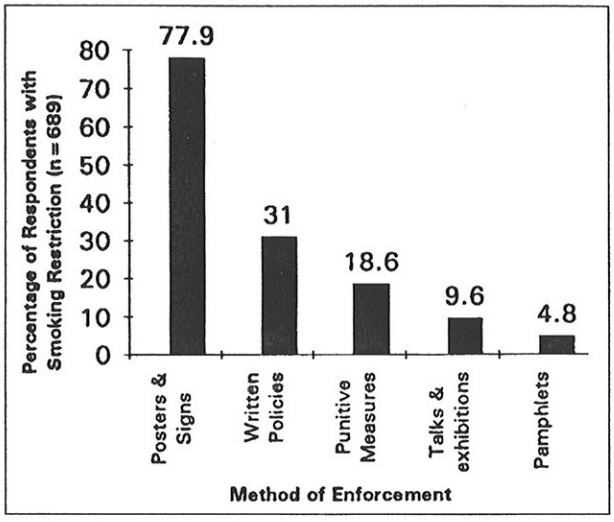


Fig 3 – Method of enforcement of restriction



Who initiated the restriction

Smoking restriction at work areas and offices were mainly introduced on the initiative of the management (Table IV).

Almost 80% of these areas had smoking restriction due to management initiative, especially in those dealing with insurance, construction, paints and chemical products, electronic products and components, industrial chemicals and gases, mechanical and electrical maintenance and products, textiles and garments, light manufacturing, PVC manufacturing, and metal and shipyard manufacturing.

Legislation accounted for smoking restriction in up to 13.5% of these work areas and offices and they were more likely to be dealing with food and beverage, hotel and catering, petroleum refineries, PVC manufacturing and industrial chemicals/gases.

Staff consensus was responsible for smoking restriction in only 7% of the work areas and offices and they were more likely to be those dealing with finance and banking, and commerce and services.

Reasons for restriction

The most common reason cited for prohibiting smoking was to safeguard the health of the workers (Table V).

65.5% of the respondents had indicated protection of the workers' health as one of the reasons, particularly those in Service. Almost all companies dealing in insurance quoted this as the reason, while more of those in construction, finance and banking, commerce and services and hotel/catering, had cited this as one of the reasons for smoking restriction.

On the other hand, 59.4% of the respondents introduced the restriction to prevent fire and explosion and/or to prevent damage to machinery and equipment. Businesses under these categories tend to be Manufacturing, such as those dealing with industrial chemicals and gases, PVC manufacturing and light manufacturing.

Methods of enforcement

The most common way of enforcing the restriction was by means of non-smoking posters and signs (Fig 3).

77.9% of the respondents with smoking restrictions had used posters and signs for enforcement. Only 18.6% resorted to punitive measures, while 9.6% organised talks and exhibitions, and 4.8% distributed pamphlets.

Other methods (which made up 31%) included incorporating written smoking policies into the company rules and regulations or employee handbooks. Reminders were sent in the form of circulars, memos, notices or through verbal instructions in order to enforce the restriction.

Year restriction was implemented

Most of the respondents with smoking restrictions implemented them after 1986 (Table VI).

Table VII shows that 43.6% of the respondents introduced the smoking restrictions to the working areas after 1986, while 19.3% introduced them between 1980 to 1985, and 20.7% introduced them before 1980. This is especially so for the Service industry, except for construction and hotel/catering.

The same trend was observed for other areas such as offices, staff rooms, canteens, recreation or games rooms, corridors, and toilets. The peak period for implementing non-smoking also appeared to be after 1986, the year the National Smoking Control Programme was launched.

However for the Manufacturing industry, most of the companies already have smoking restriction for their workareas before 1986-1987, especially those where smoking poses inherent fire risk and inherent detrimental effects to their products (Table VI).

DISCUSSION

Fifty-nine percent of private sector companies which had responded to the survey had some form of smoking restriction. The prevalence of smoking restriction in the private sector workplace in Singapore was low despite the strong anti-smoking drive in the country. One survey of 500 companies conducted in the United States in 1987 among members of the Administrative Management Society revealed that 85% had smoking restriction policies[1].

We are cautious in interpreting the prevalence rate due to the low response rate and our inability to ascertain whether the respondents were representative of the industry as a whole*. The actual prevalence rate of smoking restriction in the private sector workplace might have been even lower since companies which already had a smoking policy would be more likely to participate in the survey.

In spite of these limitations we were able to draw certain conclusions from the findings which will be of benefit for future programmes. This survey, being the first of such study ever done in Singapore, showed that private sector companies in Singapore were most likely to impose smoking restrictions under the following circumstances:

*The total number of companies within each business type was not known as the original mailing list was not classified according to business type. Our classification of the respondents according to business type was based on the information obtained from the survey.

Table III – Prevalence of smoking restriction by business type and airconditioning status

Business Type	With smoking restriction (n_1)				Without smoking restriction (n_2)			
	with aircond		without aircond		with aircond		without aircond	
	No.	% n_1	No.	% n_1	No.	% n_2	No.	% n_2
Manufacturing								
1) Food and beverage	60	95.2	3	4.8	29	96.7	1	3.3
2) Electronic products and components	114	97.4	3	2.6	33	97.0	1	2.9
3) Paint/pharmaceuticals and other chemical products	22	100.0	0	0.0	9	100.0	0	0.0
4) Industrial chemical and gases	13	86.7	2	13.3	2	100.0	0	0.0
5) Petroleum refineries and products	14	100.0	0	0.0	4	100.0	0	0.0
6) Light manufacturing	36	90.0	4	10.0	22	73.7	8	26.7
7) Metal manufacturing and shipyard services	90	97.8	2	2.2	52	98.1	1	1.9
8) PVC manufacturing	22	100.0	0	0.0	9	90.0	1	10.0
9) M&E maintenance/products	27	96.4	1	3.6	25	89.3	3	10.7
10) Textiles and garments	23	95.8	1	4.2	16	88.9	2	11.1
Service								
1) Finance and banking	44	100	0	0.0	58	98.3	1	1.7
2) Commerce and services	138	100	0	0.0	129	99.2	1	0.8
3) Construction	9	100	1	10.0	27	75.0	9	25.0
4) Hotel/catering services	30	100	0	0.0	1	50.0	1	50.0
5) Insurance	8	100	0	0.0	10	100.0	0	0.0
Others								
1) Others	22	100	0	0.0	22	91.7	2	8.3
Total	672		17		448		31	

n_1 = total number with smoking restriction in each business type
n_2 = total number without smoking restriction in each business type

Table IV – Initiative for smoking restriction in work areas and office by business type

Business Type	Law		Management		Staff		Total	
	No.	%	No.	%	No.	%	No.	%
Manufacturing								
1) Food and beverage	28	45.9	31	50.8	2	3.3	61	100
2) Electronic products and components	5	4.7	94	88.7	7	6.6	106	100
3) Paint/pharmaceuticals and other chemical products	1	6.2	15	93.8	0	0.0	16	100
4) Industrial chemical and gases	2	15.4	11	84.6	0	0.0	13	100
5) Petroleum refineries and products	2	16.7	9	75.0	1	8.3	12	100
6) Light manufacturing	1	2.7	33	89.2	3	8.1	37	100
7) Metal manufacturing and shipyard services	8	9.1	76	86.4	4	4.5	88	100
8) PVC manufacturing	4	21.1	15	78.9	0	0.0	19	100
9) M&E maintenance/products	1	4.2	21	87.5	2	8.3	24	100
10) Textiles and garments	2	8.7	20	87.0	1	4.3	23	100
Service								
1) Finance and banking	1	3.1	24	75.0	7	21.9	32	100
2) Commerce and services	19	15.4	89	72.4	15	12.2	123	100
3) Construction	0	0.0	9	100.0	0	0.0	9	100
4) Hotel/catering services	8	33.3	16	66.7	0	0.0	24	100
5) Insurance	0	0.0	7	100.0	0	0.0	7	100
Others								
1) Others	1	4.7	19	90.5	1	4.8	21	100
Total (n = 615)	83	13.5	489	79.5	43	7.0	615	100

Table V – Reasons for smoking restriction by business type

Business Type	Fire		Health		Others	
	No.	%	No.	%	No.	%
Manufacturing						
1) Food and beverage	7	9.7	33	45.8	32	44.5
2) Electronic products and components	23	17.7	88	67.7	19	14.6
3) Paint/pharmaceuticals and other chemical products	7	28.0	11	44.0	7	28.0
4) Industrial chemical and gases	10	66.7	5	33.3	0	0.0
5) Petroleum refineries and products	4	26.6	10	66.7	1	6.7
6) Light manufacturing	23	51.1	15	33.3	7	15.6
7) Metal manufacturing and shipyard services	39	40.2	51	52.6	7	7.2
8) PVC manufacturing	12	52.2	10	43.5	1	4.3
9) M&E maintenance/products	8	27.6	19	65.5	2	6.9
10) Textiles and garments	9	36.0	15	60.0	1	4.0
Service						
1) Finance and banking	3	6.2	38	79.2	7	14.6
2) Commerce and services	24	15.9	105	69.5	22	14.6
3) Construction	7	33.3	14	66.7	0	0.0
4) Hotel/catering services	5	11.9	22	52.4	15	35.7
5) Insurance	0	0.0	8	100.0	0	0.0
Others						
1) Others	11	50.0	9	40.9	2	9.1
Total	192	25	453	60	123	15

Table VI – Year in which prohibition was implemented

Area	Year in which prohibition was implemented											
	Before 1980		1980-1985		1986-1987		1988-1989		1990-1991		No response	
	No.	%	No.	%	No.	%	No	%	No	%	No	%
Work areas (n = 617)	128	20.7	119	19.3	66	10.7	99	16.0	104	16.9	101	16.4
Offices (n=508)	37	7.3	85	16.7	62	12.2	105	20.7	118	23.2	101	19.9
Canteen (n=222)	7	3.2	25	11.3	22	9.9	65	29.3	64	28.8	39	17.6
Staff room (n=234)	17	7.3	41	17.5	27	11.5	44	18.8	59	25.2	46	19.7
Recreation/games room (n=152)	8	5.3	19	12.5	24	15.8	39	25.7	33	21.7	29	19.1
Corridor (n=230)	23	10.0	41	17.8	28	12.2	45	19.6	45	19.6	48	20.9
Toilets (n=198)	18	9.1	33	16.7	23	11.6	36	18.2	47	23.7	41	20.7
Others (n=91)	10	11.0	22	24.2	11	12.1	20	22.0	13	14.3	15	16.5

1979 – Anti-Smoking Campaign 1979
1980-1985 – No specific campaign
1986 onwards – National Smoking Control Programme (NSCP)

(a) *Where the are existing smoking control legislation*
The presence of air-conditioned restaurants, fitness centres and lifts would no doubt account for the very high prevalence of smoking restrictions (93.8%) in the hotel sector.

(b) *Where the nature of the business itself warrants such smoking restrictions, even though there were no existing legislation*

This includes companies dealing with inflammable chemicals and gases where smoking poses inherent fire risk; those dealing with food and beverage, where smoking restriction is introduced for hygiene reasons; those dealing with precision electronic microcomponents, where a smoke and dust free environment is critical for maintaining the quality of the product.

(c) *Where the companies employ a workforce of at least 100 people*
Most of these larger companies belong to Manufacturing Business which requires smoke and dust free environment, or which have work conditions that predispose them to fire hazards. Furthermore, several multinational organisations might have adopted the smoking restriction policy as an extension of the corporate policy of their parent companies.

(d) *Where there is good management support*
This is true for all business types, but especially so in work areas which are not covered by existing legislation.

It is worth nothing that the number of cases of smoking restrictions initiated by the management might be over inflated. Conversely, cases which implemented such policies by law might have been under reported. The representative from the company who answered the questionnaire might have attributed a directive from the management to restrict smoking as a management decision when it was actually a directive issued to meet a legislative requirement.

(e) *Where there is strong health promotion efforts*

Interestingly, most of the companies which reported having smoking restrictions implemented them after 1986, the year

Table VII – Year in which smoking restriction took effect in work areas by business type

Business Type	Before 1980		1980-1985		1986-1987		1988-1989		1990-1991		No response	
	No.	%	No.	%	No.	%	No	%	No	%	No	%
Manufacturing												
1) Food and beverage	9	15.5	7	12.1	3	5.2	9	15.5	19	32.8	12	20.7
2) Electronic products and component	16	14.0	20	17.4	21	18.4	20	17.5	21	18.4	16	14.0
3) Paint/pharmaceuticals and other chemical products	8	42.1	3	15.8	0	0.0	2	10.5	3	15.8	3	15.8
4) Industrial chemical and gases	6	42.9	4	28.6	2	14.3	0	0.0	0	0.0	2	14.3
5) Petroleum refineries and products	4	30.8	1	7.7	1	7.7	2	15.4	2	15.4	3	23.1
6) Light manufacturing	12	36.4	10	30.3	4	12.1	3	9.1	1	3.0	3	9.1
7) Metal manufacturing and shipyard services	26	31.0	16	19.0	4	4.8	17	20.2	8	9.5	13	15.5
8) PVC manufacturing	5	25.0	3	15.0	3	15.0	3	15.0	5	20.0	1	5.0
9) M&E maintenance/products	3	12.5	7	29.2	4	16.7	3	12.5	3	12.5	4	16.7
10) Textiles and garments	5	20.8	11	45.8	2	8.3	2	8.3	3	12.5	1	4.2
Service												
1) Finance and banking	1	2.7	4	10.8	6	16.2	8	21.6	8	21.6	10	27.0
2) Commerce and services	21	17.6	16	13.4	12	10.1	20	16.8	27	22.7	23	19.3
3) Construction	0	0.0	3	60.0	0	0.0	0	0.0	1	20.0	1	20.0
4) Hotel/catering services	5	19.2	6	23.1	2	7.7	6	23.1	2	7.7	5	19.2
5) Insurance	1	14.3	0	0.0	1	14.3	1	14.3	0	0.0	4	57.1
Others												
1) Others	5	26.3	8	42.1	1	5.3	3	15.8	2	10.5	0	0.0
Total (n=617)	127		119		66		99		105		101	

the ten-year ongoing National Smoking Control Programme was introduced. It is also after this period that we see more companies extending smoking restrictions to areas beyond work areas to offices, canteens, staff rooms, recreation rooms, corridors and toilets. Health promotion programmes therefore appear to be a positive factor for smoking restriction, especially in the Service industry.

Recommendations

Based on the results of this survey, it is recommended that future programmes on smoking restriction should give more emphasis to the Service Industry. Programmes should also be tailored to meet the requirements of smaller companies as only 46.8% of companies with fewer than 100 employees had workplace smoking restrictions. The hotel industry should not be neglected in spite of the high prevalence rate of smoking restriction (93.8%) as these restrictions are not necessarily extended to areas beyond fitness centres, restaurants and lifts at the hotels, such as the lounges, bars, discotheques, hotel lobbies and guest rooms.

It will be necessary to work through the management, who have an important role in determining whether smoking should be restricted at the company. Furthermore, effective enforcement of the restriction demands a high level of commitment on the part of the management.

The management cannot be expected to be commited to this objective unless it is convinced of the need to safeguard the health of all workers. Sufficient education on the hazards of environmental tobacco smoke will have to be provided by the health education authorities.

The Workplace Health Education Unit of the Training and Health Education Department directs its health education programmes at both the management as well as the staff. In 1990 staff participation was invited through the "Put it to the Vote" project. The staff at 50 out of 55 private organisations voted in favour of prohibiting smoking in the workplace[13]. Such programmes can provide important feedback to the management regarding staff consensus on workplace smoking restriction. Handbooks giving guidelines on how to implement a smoking policy at the workplace were produced and distributed to the management of private companies between 1986 and 1992.

CONCLUSION

The first study of the prevalence of smoking restriction in private workplace in Singapore showed that future workplace smoking control programmes should give more emphasis to the Service Industry. Programmes should be tailored to meet the needs of smaller companies. They should also involve the management who play an important role in implementing smoking restriction at their workplace.

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