

Journal of Business & Leadership: Research, Practice, and Teaching (2005-2012)

Volume 4
Number 2 *Journal of Business & Leadership*

Article 8

1-1-2008

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Recommended Citation

Kaupins, Gundars and Usui, Kengo (2008) "Countervailing Forces Affecting Japanese Telework Behavior," *Journal of Business & Leadership: Research, Practice, and Teaching (2005-2012)*: Vol. 4: No. 2, Article 8.

DOI: 10.58809/EFJB3528

Available at: <https://scholars.fhsu.edu/jbl/vol4/iss2/8>

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COUNTERVAILING FORCES AFFECTING JAPANESE TELEWORK BEHAVIOR

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A literature review of Japanese and American research reveals several countervailing forces affecting Japanese telework behavior. Cultural characteristics such as collectivism, power distance, long-term orientation, uncertainty avoidance, masculinity and the need for face-to-face contact appear to negatively impact the amount of telework in Japan. Other negative influences include job design and legal limitations. New forces such as technology, commuting time, environmental needs, safety concerns, energy consumption, efficiency, productivity, societal changes, generational effects, supportive associations, company strategy, and government initiatives appear to increase Japanese telework. Though Japan had been slow in establishing telework in the 1990's, telework growth might be fast in the 2010's due to the new forces. Implications for future research are included.

Though a high level of technology exists to enhance telework in Japan, several researchers have speculated why Japan has not embraced telework as much as the United States and Western Europe (e.g., Goth, 2008; Harden, 2007; Higa & Shin, 2003; Higa & Wijayanayake, 1998). This article examines the research literature to explain why Japan had been slow in adopting telework and why Japan will likely be adopting telework at a much higher rate in the future. It defines telework and examines studies investigating the amount of telework in Japan. It then outlines forces limiting telework and forces supporting telework such as government policies, technology, supportive associations, efficiency and productivity, societal changes, generational effects, and commuting time.

This article contributes to the body of knowledge by being the first to organize the comprehensive collection of reasons for initial slow growth and impending fast growth. Past research has been piecemeal. More comprehensive research reveals numerous research gaps that lead to specific suggestions for future research and leads to conclusions about the nature and rate of telework growth in Japan.

DEFINITIONS

Mokhtarian, Salomon, & Choo (2004) state that researchers, polling organizations, and government officials disagree on the definition of telework. One complicating factor is whether to include salaried or non-salaried employees. Braus (1993) and Gordon (1990) suggest that teleworkers are salaried employees doing work at home during business hours. In contrast, Pratt (2000) considers teleworkers as employees or independent contractors who work at least one day each month at home during business hours.

For the purposes of this paper, telework involves work carried out in a location remote from the normal work facilities, but with the opportunity to communicate with normal work facilities using communication technologies (Gupta, Karimi, & Somers, 1995; Ruppel & Harrington, 1995). Mobile phones, land lines, and computer connections are among many ways to communicate from a satellite

office, home, a customer's site, or some other location chosen by him or her.

There are three types of telework. Satellite office work involves primarily working at an office located close to the workers' homes and away from headquarters. Telecommuting work involves workers primarily working at home during regular work hours and away from headquarters while using electronic communication methods to connect with headquarters (Higa & Wijayanayke, 1998; Junko & Yoshitaka, 2003). Mobile work involves workers primarily working at a customer's site or some other location (e.g., car, beach, restaurant) while electronically communicating to the headquarters (Junko & Yoshitaka, 2003).

AMOUNT OF JAPANESE TELEWORK

Despite the relatively advanced information technology infrastructure, the adoption of telework has been slower in Japan than most industrialized countries such as the United States in the 20th century (Goth, 2008; Harden, 2007; Higa & Shin, 2003; Higa & Wijayanayake, 1998). They make these conclusions in spite of the confusing array of data on the amount of telework.

Mokhtarian, Salomon, and Choo (2004) state that surveys and vested interests affect the quantity and quality of telework data. Surveys measuring telework have varied by counting salaried workers only, including all workers, or eliminating farm workers, live-in domestic workers, and self-employed workers. Some surveys count a lot of teleworkers when they consider those who have teleworked at least once a month. Other surveys show dismal teleworker counts when the only teleworkers counted are those doing it four days a week. Some surveys count moonlighters and some do not. Vested interests in the government and industry groups might to increase the number of teleworkers to show success in enhancing their numbers. They could encourage researchers to count part-time workers and home-based business workers who occasionally telework as teleworkers.

Japanese surveys of the extent of telework reflect many of these complications. For example, "Worldwide Mobile Worker 2007-2011 Forecast and Analysis" reports that the American workforce had the highest percentage of teleworkers who do at least some telework at 68 percent in 2006. In contrast, Japan had 53 percent in 2006 (Sudan, et al, 2007). The forecast foresees the Japan's telework rates will increase the most in the world with a jump from 68 percent in 2006 to 80 percent of the workforce in 2011 (Boston Business Journal, 2008).

An earlier survey by the IT Japan Strategy Committee of the Japanese Government (2003) stated that the telework population in Japan who spend at least eight hours per week telework consisted of about 3.11 million employed teleworkers and about .97 million self-employed teleworkers in 2002. The percentage of employed and self employed teleworkers relative to total workers are 5.7% and 8.2% respectively. The total teleworkers as a percentage of total workers was 6.1% (48 million teleworkers). The projection was to have about 20% of all Japanese be teleworkers by 2010.

A report by the Electronic Commerce and Telework Trends Commission (ECaTT, 2000) revealed that the United States had about 16 million teleworkers (13% of the workforce) in 1999. Nordic countries such as Finland and Denmark had higher percentages around 15%. Southern European countries such as Italy and Spain had lower percentages around 5%. Japan had about 8%. However, ECaTT's data on Japan had major flaws because this was based on a 1996 Satellite Office Association of Japan survey that covers only full-time white collar employees (Baufeld, Heidak, & Welfers, 2003).

FORCES LIMITING JAPANESE TELEWORK

The culture in Japan is among the most significant factors limiting Japanese telework. Culture is a society's set of assumptions, values, and rules about social interaction (Klieman, 2007). The Japanese have been known to have a family-oriented culture in which the husband works at the company and the wife is at home with the children. The husband traditionally works at the company for a lifetime and is rewarded for long hours there (Gottfried, 2008).

To describe some of Japan's cultural attributes that may affect telework, Hofstede's (2001) cultural dimensions (individualism, power distance, long-term orientation, uncertainty avoidance, and masculinity) provide a shell. The five cultural dimensions have been used by many international researchers to compare countries. He has completed research on these dimensions in over 350 countries.

Individualism

According to Griffith, Myers, and Harvey (2006) and Yamagishi, Cook, and Watabe (1998), Japan has traditionally been a collectivist society. It has low levels of individualism and high levels of teamwork. The Japanese

often prefer to belong to groups and place group interests above their own individual interests. In addition, having good personal relationships with the bosses is considered an important factor in career promotions (Higa & Wijayanayake, 1998). Due to the high level of collectivism, Straub (1994) states that meetings are usually held for information sharing and relationship building purposes in Japan, while meetings are held for decision making purposes in the United States.

It may be more difficult to encourage telework in Japan due to the increased teamwork that the culture encourages. Receiving phone calls or e-mails from one distant associate might not encourage highly prized relationships (Mokhtarian & Sato, 1994; Raghuram, London, & Larsen, 2001).

In a meta-analysis of 46 studies on telecommuting, Goth (2008) found that telework four to five days a week did not strain the telecommuter-manager relationship. It did diminish a sense of teamwork between telecommuters and coworkers.

Power Distance

Japan traditionally has long recognized the strong sense of power among top senior officials. Seniority is important. The seniority system bases its pay system on seniority and not as much on actual performance. As a result, the seniority based system creates ambiguous job descriptions and fuzzy job evaluations because it separates the actual work performance from the performance evaluation. A sense of seniority may be more difficult to demonstrate when communications are via phone or e-mail (Mokhtarian & Sato, 1994; Spinks, 2000).

Long-Term Orientation

Japan has a high level of long-term orientation. Traditionally, many organizations in Japan have adopted the long-term employment that has impacted the creation of traditional Japanese business practices such as on-the-job training and frequent job rotation. Typically, new graduates are initially assigned to a provisional position with several months of on-the-job training before officially being assigned to a specific position. After being assigned several years to a specific position, they regularly get reshuffled to other positions and departments within the firm throughout their careers (Spinks, 2000). Companies are able to implement on-the-job training and frequent job rotation due to the premise that both sides expect long-term employment from one another.

On-the-job training is often more easily done on-the-job rather than by long-distance communication. Long-distance communication might be more convenient sometimes given the difficult traffic situation in large Japanese cities, however, such communication might not help build long-term relationships that are a major part of Japanese companies (Raghuram, London, & Larsen, 2001).

Uncertainty Avoidance

Straub (1994) states that the high level of uncertainty avoidance in the Japanese culture tends to affect the behavior towards low acceptance of new work technologies, therefore, the Japanese are likely to choose information-rich and socially-present communication methods such as face-to-face communication over other electronic communication methods. In addition, Higa, Sivakumar, Yen, & Bui (1996) state that the risk tolerance level of Japanese culture is relatively low, thus employees in Japanese firms are less encouraged to be aggressive, innovative, or risk-seeking. As a result, the business practice, company rules and regulations, and organization functions for Japanese firms tend to be less flexible and more formalized. Higa and Shin (2003) suggest that many middle managers in Japan are simply afraid of telework while top management tends to be curious. Most wait for other companies to take the lead.

Uncertainty avoidance also can relate to the amount of standard, stable employment in the economy. Standard employment relates to those continuously employed immediately after graduating school and then working in the same company for a long period of time. This is based on masculine work patterns in which the male worker does not have household commitments. Nonstandard employment is more unstable and can consist of part-time jobs that can be temporary (Gottfried, 2008).

Higa and Shin (2003) believe much telework will continue to be implemented largely by part-time workers and not among those involved with standard employment. Much of the part-time telework involves word processing, report writing, data entry, sales, and marketing often done by female workers.

Masculinity

Traditionally, the role of Japanese men was to work and "provide for his family," while that of Japanese women was to stay at home to take care of the children and housework. Although in recent years the direction has shifted more towards "egalitarianism," the traditional gender roles and high masculinity culture still remain in Japan. Japan is considered to be one of the most developed countries in the world, yet Japan still seems to maintain a more traditional gender role ideology compared to other less developed countries (Sugihara & Katsuyada, 2002). Therefore, although the situation has been rapidly changing in recent years, the role and responsibility of Japanese men still tend to weigh heavily on work over family and housework, thus the social need to adopt telework is still relatively weak compared to the developed countries with high femininity culture.

Higa and Wijayanayake (1998) state that residences are relatively smaller in Japan than the United States. Accordingly, it is difficult for workers to secure a place for home telework office. Also, in traditional Japanese marriages, the wives tend to have control of the house and

having her husband working at home during the day time makes her feel that her territory has been invaded and oppressed. As a result, not only the working husband, but also the family will start to feel the stress.

Other Cultural Influences

Japanese give first priority to face-to-face interaction above written or electronic means of communication. This face-to-face interaction is useful not only at work but at drinking sessions in bars and restaurants after work. Since formal performance appraisals and job descriptions are rare in Japan, personal relationships play a huge role in the advancement and pay of workers. Written contracts between parties are not the end of negotiations but just the beginning. Face-to-face communications can let those contracts evolve (Higa, Sivakumar, Yen, & Bui, 1996; Mokhtarian & Sato, 1994).

The advent of video phones and cameras on computers might enhance indirect face-to-face communications. However, direct face-to-face contact would allow bows, handshakes, and personal gifts to be provided that are important in the culture (Raghuram, London, & Larsen, 2001).

Perceived Job Design

Beyond cultural influences, one of the biggest factors in limiting telework is perceived job design by management. According to a survey of Japanese managers by Higa and Wijayanayake (1998), the top reasons for not implementing telework are that there is no suitable job for telework and teleworkers are hard to manage.

A factor that influences job suitability is the perceived knowledge accessibility needed for professional, managerial, and other jobs. Lee, Shin, and Higa (2007) found significant perceived drops in knowledge accessibility for telework as opposed to central-work in companies based on a survey of Japanese managers.

Legal Limitations

According to Higa and Masuoka (1999) and Mokhtarian and Sato (1994), the lack of appropriate telework adoption guidelines has played a major role in the slow adoption of telework in Japan. Ouchi (2000), law professor at Kobe University, identified four legal limitations on the use of telework in Japan. First, regulations regarding labor contracts within the Japanese Labor Standards Law (LSL) require employers to provide clear information about working conditions within a company. But such regulations are not in existence for teleworkers who have not employee status so bad working conditions may exist and lead to lawsuits. Second, challenging telework contract terms may occur. For example, one Japanese company forced a teleworker to work without payment to compensate for damage the teleworker had previously done. Also, the usual and required 30 days advance notice of dismissal of regular employees is not covered for teleworkers. A telework

contract could read that employees may be dismissed without warning. Third, health protection for teleworkers may be lacking. Teleworkers, without employee status, do not have the same protections as those with employee status. Teleworkers who have employee status have the same protections as regular workers but it is more difficult to monitor in the outside locations where they work.

Finally, privacy protection for all teleworkers may be diminished. Since telework must be accomplished by computer, phone, e-mail, or other electronic method, the privacy of the work may be compromised by administrators who inappropriately use private information about the employee, security breaches, and careless storage of data (International Affairs Department, Telecommunications Bureau, 2008).

FORCES INCREASING JAPANESE TELEWORK

Though culture, job design, and legal limitations have probably reduced the amount of telework in the past, new forces in Japan are emerging to encourage more telework. Many of these forces involve technology and its relationship to the economy and society.

Technology

The inflexibility of the traditional wired telework style forced many workers to take paid leave or resign to take care of their child or elderly (Goth, 2008). Now with wireless technology, more workers have the freedom to travel to different locations while they are working to also attend to their family needs.

Japan is one of the world leaders in use of wireless telecommunications in the world (Shim, 2005). From a study conducted by the Telecommunications Carriers Association (TCA) (2006), the number of mobile phone subscribers in Japan was approximately 93.5 million and approximately 81.1 million of those people are mobile Internet subscribers. According to Okazaki (2004), the key driver of the growth and development of mobile telecommunications has been NTT DoCoMo's "i-Mode", which developed the most comprehensive mobile Internet service portal today. According to Harden (2007), mobile phones in Japan provide advanced Global Positioning Systems (GPS), credit card purchasing, high-definition video display, video conferencing, and web surfing at least eight to thirty times faster than in the United States. The connections deliver more data at lower cost than any other part of the world.

Commuting Time

Long commuting times intuitively increase the demand for telework due to the inconvenience to get to work. Commuting into Tokyo by car or train has been getting much more difficult. According to a survey by Higa and Wijayanayake (1998), over half of respondents from Tokyo spend more than 60 minutes (one way) to commute. About 30 percent of respondents from Osaka and Nagoya spend

more than 60 minutes. The number of telecommuters particularly around Tokyo is relatively higher than Osaka and Nagoya and especially other cities.

Mitomo and Jitsuzumi (1999) estimated that about 9-14 million Japanese employees will telework by 2010. This would result in a 6.9 to 10.9 percent reduction in congestion in Tokyo. Cost savings are equal to about 7.9 to 26.4 percent of public transportation annual spending.

Environmental Needs and Safety Concerns

Several researchers such as Mitomo and Jitsuzumi (1999) and Mokhtarian, Salomon, and Choo (2004) suggest additional benefits of reduced commuting time are reduced air pollution, fatalities on roadways, and greenhouse gasses. However, formal estimates of the extent to which telework reduces air pollution, roadway fatalities, and greenhouse gasses are lacking in Japan.

Energy Consumption

High gas prices make telework more appealing. Williams (2003) calculated that the adoption of the four day telework week for the mobile sales and technical workforce in Japan would reduce national energy consumption by one percent. If clerical workers also teleworked, there would be an additional 1.1 percent savings possible. For current teleworking activity in Japan, Matthews and Williams (2005) estimate energy savings of 0.03–0.36%.

Efficiency and Productivity

Companies have begun to acknowledge telework as an effective strategy in strengthening the competitiveness of companies. Company managers of teleworkers are now seeing value in wireless teleworking because they are more efficient in customer service and can provide speedier decision making (Shoji, 1999). In a survey of Japanese teleworkers, about 70% stated that wireless teleworking increased their productivity. The average increase in productivity was 25%. In addition, the average time spent at customers' sites increased by 20% after the implementation of wireless telework (Ministry of Posts and Telecommunications, 2006). Higa and Wijayanayake (1998) reported that the three most significant reasons for introducing telework are a reduction in cost (38%), higher productivity (33%), and relief from pressure of work (33%).

Societal Changes

Recent societal changes also may help push the adoption of telework in Japan. More workers prefer a flexible work style to enhance the work/family balance. The balance is tipped toward the family due to increases in child and elder care needs stemming from dual working parents and an aging population.

Many Japanese firms are moving away from Japan's traditional male-centered corporate culture. The old system is based on seniority that puts high value on employee loyalty. The same system rewards a long time at the office

because it is equated with productivity. The new system equates shorter hours with higher productivity.

Historically, women were not provided high level jobs because they could not work the long hours. With flexible telework and the focus on productivity during work hours, more women and elderly workers could be productive. Their abilities are recognized rather than their total hours (Kaneko, 2007).

Generational Effects

The millennium generation (born about 1999 to present), Generation Y (born about 1983 to 1998), and Generation X (born about 1965 to 1982) are becoming more prevalent in the workplace. These generations are more accustomed to working with computers and other forms of electronics, more flexibility in their current jobs, and more mobility in their careers (Streeter, 2007; Sherrod, 2007, Terjesen, Vinnicombe, & Freeman, 2007). According to a survey of Japanese workers performed by the Satellite Office Association of Japan (1996), over 70 percent of workers in their twenties and thirties respectively were interested in doing telework while less than 40 percent of workers over fifty were interested in telework. The data is somewhat limited, however, because the older workers tended to be in administrative positions that tend to not be as associated with telework.

Supportive Associations

The Japan Telework Association is a central source of information about telework activities in Japan. Over 200 Japanese companies are members to obtain the following services: teleworker population surveys, investigations into the actual conditions of telework operating companies, case studies, the "Telework Report", symposiums and seminars, telework consultation centers, awards for companies who promote telework, and support for the Japan Telework Society. The society is academically-oriented and devoted to research about telework practices and trends.

Several projects enhancing private enterprise and telework have been established. The Shirataka Telework Group has a virtual agriculture project, called the Shirataka Sake Brewing Workshop, with the purpose of expanding the market for its local product. Tokyo Teleport Town is a new town in the Tokyo metropolitan area that utilizes the latest in satellite and telecom technology.

Company Strategy

Major companies have decided to plunge full speed into telework. For example, IBM Japan has offered such work arrangements since the year 2000 to serve documented eldercare and childcare needs. The documented requirement was dropped in 2001 so that about 2000 employees use this option. Matsushita Electric Industrial offered 30,000 of its Japanese employees the telework option (Goth, 2008).

Government Initiatives

Government initiatives are changing the role of telework in Japan. The Ministry of Posts and Telecommunications (2006) reports that Prime Minister Shinzo Abe has set a goal of doubling the number of teleworkers from 6.74 million in 2005 to more than 13 million in 2010. One government plan is to ease employment insurance standards to cover flexible hour workers who take care of children or disabled relatives. To enhance telework communications, Harden (2007) reports that in 2000, the government made major phone companies open up their wires to new Internet providers. The government also provided the Nippon Telegraph and Telephone Corporation (NIT) with major tax breaks and subsidies to develop fiber-optic lines to homes.

According to Shimbun (2007), the Japanese government's newest tax-related program is to provide fixed asset tax breaks to companies that introduce telework systems. Specifically, these systems are "thin client systems" in which a server manages personal computer data from teleworkers. The system allows only a select number of people to use it to reduce information breaks. The government calculates that about 300 large companies will introduce the system in the next two years thereby reducing their taxes by about 140 million Yen in the next five years.

FUTURE RESEARCH

Much future research is still needed to assess the amount of Japanese telework. The biggest frustration with Japanese telework data is that surveys are sporadic and inconsistent in the use of telework measures. According to Mokhtarian, Salomon, & Choo (2004), multiple telework definitions, measurement instruments, sampling, and vested interests affect the quality of telework data. Teleworkers have been counted if they do part-time work (Sudan, et. al., 2007), full-time work (IT Japan Strategy Committee of the Japanese Government, 2003), and are working as full-time, white collar employees (Electronic Commerce and Telework Trends Commission, 2000). Some consistent definitions of telework over time need to be provided across countries and within Japan to get accurate trends associated with telework.

There are fewer full-scale detailed surveys of telework programs in Japan than have been done in Western Europe and the United States. Surveys from the Satellite Office Association of Japan (1997) show that small companies with less than thirty employees tend to focus more on telecommuting whereas larger companies with a thousand or more employees tend to favor satellite offices. There could be significant gender differences in which more women might be doing part-time telework in order to balance work and family more.

The impact of telework on efficiency, productivity, the environment, safety, energy consumption, and other major country characteristics needs to be further examined. Mokhtarian, Salomon, and Choo (2004) describe the

difficulty of measuring some of these country characteristics by showing the difficulty in measuring the aggregate vehicle miles saved, reduction in the number of fatalities on roadways, productivity measures within companies. Researchers need to defend their data sets and try to provide longitudinal consistency.

The Electronic Commerce and Telework Trends Commission (2000) report is one possible model for future research in Japan. In that survey, teleworkers are differentiated by satellite offices, telecommuting, and mobile work. The demographic composition of teleworkers was differentiated by gender, age, household type, number of children, education, industry sector, business size, commuting distance, and type of region. Teleworkers' behavior and work patterns were analyzed by what technology they used to communicate with headquarters, working hours, type of business contacts, and job activities. The report also covers organizational forms of telework, supplementary telework, and managerial/worker interest and awareness regarding telework.

More case studies of successful and unsuccessful telework adoptions need to be analyzed. Higa and Shin (2003) provided nine case studies (five successful and four unsuccessful) of telework introductions. They found that companies that successfully adopted telework tended to focus on adequate training, support, evaluation processes, changes in reward structure, management approaches, and information technology infrastructure rather than focus on the selection of adequate workers.

CONCLUSIONS

According to the literature review of Japanese and American research, cultural aspects of Japan such as of collectivism, power distance, long-term orientation, uncertainty avoidance, masculinity, and face-to-face communication appear to limit the amount of telework that occurs in Japan. A high need to work face-to-face and be at work for long hours takes makes personal contact important and diminishes the role of indirect electronic contact through telework.

However, the culture is changing as more women are entering the workforce and desire flexibility to work and take care of the family. Younger generations are computer savvy and are more comfortable with using technology to work and maintain communications with the central office without needing to do long commutes.

Supportive organizations such as the Japan Telework Association provide much needed support for companies who are thinking about using telework to enhance their strategic plan. Further support comes from the Japanese government which is changing the laws to provide incentives for companies who wish to be involved with telework.

Company managers perceive the productivity benefits of telework by the efficient use of computer and telecommunications of employees and fewer frustrated

employees who come to work exhausted from their long commute. Further benefits come from fewer accidents on roadways, lower energy use, and increased ability of teleworkers to help their families because they are at home more often.

Overall, the trends in technology, commuting time, environmental needs, safety concerns, energy consumption, efficiency, productivity, societal changes, generational effects, supportive associations, company strategy, and government initiatives provide considerable boost to "Worldwide Mobile Worker 2007-2011 Forecast and Analysis" (Sudan, et. al., 2007) arguments that there will be considerable increases in the amount of telework through the year 2011. Telework in Japan should rapidly increase because the effects of technology, political, and economic conditions should be more powerful than the cultural forces holding usage back. Statistical trends from Sudan's et. al. (2007) research already suggest the increase.

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