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**Faculty of Arts,
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Vol. XIV, No. 01, 2023

Paradigms shift from the First Demographic Transition (FDT) to the Second Demographic Transition (SDT) and fertility studies in Sri Lanka

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Abstract

Fertility transition has been a significant focus in demographic studies, with the First Demographic Transition (FDT) and Second Demographic Transition (SDT) theories offering essential explanations for shifts in fertility behaviour. The FDT outlines the transition from high to low fertility rates as societies undergo modernization. At the same time, the SDT emphasizes post-modernization factors like individualism, ideational changes, and cultural shifts that contribute to fertility falling below the replacement levels. This paper critically evaluates the applicability of these theories to Sri Lanka's unique fertility transition, which diverges from typical patterns observed in other developing nations. Despite relatively limited socio-economic development, Sri Lanka reached below-replacement fertility by 1999, an anomaly that challenges traditional FDT assumptions. Through a comprehensive literature review of Western and Sri Lankan fertility studies, this paper explores whether structural, cultural, and technological factors from FDT and SDT can be applied to Sri Lanka's fertility evolution. The study proposes an analytical framework combining elements of both theories to explain the country's distinctive fertility transition. It suggests that cultural changes, such as shifting values and lifestyles, may play a more critical role than previously understood. This framework opens new avenues for future research into the demographic and cultural factors influencing fertility in Sri Lanka and other developing countries.

Keywords: Demographic transition theories, review, fertility transition, modernization

Introduction

Fertility transition is a complex subject, and various theories and approaches have been developed primarily based on Western experiences. Among these, the First Demographic Transition (FDT) and Second Demographic Transition (SDT) theories are crucial because they have driven the development of other socio-economic and cultural theories that explain fertility transitions. The FDT explains the transition from high to low fertility levels as a result of modernisation. At the same time, the SDT describes fertility transitioning below replacement levels due to post-modernisation factors in the Western world.

Sri Lanka's fertility transition began in the 1950s and uniquely reached below the replacement level in 1999, a development that sets it apart from other developing countries in the region. Although substantial research has been conducted on the fertility transition in Sri Lanka, the exact reasons for this distinctive transition still need to be more conclusive. Can the fertility transition in Sri Lanka, which mirrors certain aspects of Western fertility transformations, be explained through the lenses of the FDT and SDT theories? The primary objective of this review is to critically evaluate the applicability of the First Demographic Transition (FDT) and Second Demographic Transition (SDT) theories to Sri Lanka's fertility transition. By analysing existing literature, this study aims to introduce an analytical framework for future research.

Methodology

The methodology for this review paper follows a structured approach to critically evaluate the applicability of the First Demographic Transition (FDT) and Second Demographic Transition (SDT) theories to Sri Lanka's fertility transition. A comprehensive literature review was conducted to assess whether these theories can explain the unique fertility patterns in Sri Lanka.

First, the FDT and SDT theories were thoroughly examined to understand their core principles and applicability. This step involved analysing key texts and research that define these theories and their explanations of fertility transitions in Western contexts. Secondly, existing research on fertility in Sri Lanka was reviewed. This includes the works of prominent

scholars such as Meegama (1967), Sandaratne (1975 and 2004), Dangalle (1982), Attanayake (1984), Dissanayake (2011), and others, who have explored the demographic changes in the country. These studies provided valuable context for understanding the specific factors influencing fertility transitions in Sri Lanka, such as mortality rates, marriage patterns, and socio-economic conditions.

The search for relevant literature was conducted using library sources, academic databases, including JSTOR and Google Scholar, and specialised journals focused on demography and fertility studies. Key terms such as "first demographic transition," "second demographic transition," "Sri Lanka fertility transition," and "demographic models in Sri Lanka" were used to locate relevant sources.

Based on the insights gained from the literature review, an analytical framework was developed to study the fertility transition in Sri Lanka. This framework integrates elements from both FDT and SDT theories and considers demographic, structural, cultural, and technological factors that influence fertility behaviour. This holistic framework aims to provide a comprehensive explanation for the fertility transition in Sri Lanka and evaluate the relevance of both demographic transition theories in this context.

Overview of the demographic transition theories and fertility transition

A demographic transition, from high birth and death rates to low birth and death rates, happened in Europe, which was triggered by industrialisation, urbanisation, and modernisation, and this was explained by FDT theory (Notestein, 1945). Around the mid-1960s, most of the North European countries achieved the replacement level of fertility, and in some places, it had reached below the replacement level. In addition to the fertility decline, many other demographic changes happened: having children at a late age, cohabitation became common, the proportion of children who were born out of wedlock increased, many different types of family arrangements were created, and marriage became a much less

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permanent arrangement than in the decades before. A new theory, the SDT theory, was formulated to explain the new situation.

Van De Kaa and Lesthégheas developed the SDT theory, and they tried to explain the achievement of the below replacement level of fertility, emphasising the involvement of structural, technological and cultural changes. The structural changes and the socio-economic changes addressed in the FDT theory were similar. However, cultural changes, values, and attitudes toward married life, family life, and lifestyles were explained only by the SDT theory. The SDT should have considered the role of socio-economic and technological development but highlighted the role of ideational and cultural changes. Thus, the FDT and SDT played a crucial role in explaining the fertility transition. Therefore, the next section will look into these two crucial theories and how they explain the fertility transition.

First Demographic Transition Theory (FDT)

The FDT theory states that societies that experience modernization progress from a pre-modern regime of high fertility and high mortality to a post-modern one in which both fertility and mortality are low. This theory attempted to describe and explain how and why fertility and mortality changed over time and space based on Western experience. Key elements of the theory can be found in several early discussions, including Thompson (1929), Notestein (1945), Davis (1945) and Becker (1960). The researchers developed later more theoretical work and approaches to explain fertility transition based on three central propositions. Those propositions are;

- i. Mortality decline followed by fertility decline
- ii. Restriction of marriage followed by the limitation of birth
- iii. Modernization is the cause of fertility decline.

Based on these three propositions, a number of empirical studies were carried out to test the FDT theory in general and fertility transition specifically. However, Landry (1934) mentioned that the second proposition, the restrictions in marriage followed by the limitation of birth, needed to be elaborated by demographers under the FDT (Chesnais, 1999, p.7). It was elaborated in SDT; therefore, this

proposition will be discussed under SDT. The following section describes the first and third propositions.

Mortality decline followed by fertility decline

The causal factor for fertility declines at the early stage of demographic transition was the mortality decline. Fertility decline lagged behind mortality decline because time was required for the population to realize that mortality had declined and for the social institutions supporting high fertility to change in response to new industrial conditions. Notestein (1945) stated;

The process of modernization in the European world led to a rise in standards of living, greater control over disease and a decline in mortality. Fertility, on the other hand, was less responsive to the process of modernization... the reason why fertility declined only after mortality is fairly clear. With the high mortality of the pre-modern era, all societies needed high fertility to survive. The organization of all these societies was finely adjusted so as to ensure the necessary number of births. Their religious doctrines, moral codes, laws, education, social customs, marriage systems, and family structure were all designed to maintain high fertility (Notestein, 1945, p.39-40, cited as Chesnais, 1999, p.7).

Coale noted certain exceptions based on the French and German study in 1973 and a study by Kondel and Van de Walle in 1979. They observed that in a number of Belgian and German provinces, the decline in marital fertility emerged before that of infant mortality (Coale, 1973, p. 61 cited as Deborah, 2005, p.19). An inconsistency like that was identified in the argument that the decline in mortality necessarily precedes the decline in fertility. In some societies, fertility declined before mortality, but in other societies, these elements declined almost simultaneously.

After reviewing the literature, Cleland (2001) argued that there was no mechanical relationship between mortality and fertility decline. In his view, too, many mediating factors obscured any mechanical dose-response relationship between probabilities of survival and fertility trends. Declines in fertility have been documented in a wide variety of social and economic settings, and they were, when looking at small regions, not always preceded by a decline in mortality. However, Reher (2004) argued differently. From his review of the available literature and his analysis of data from 145 countries, he stated;

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Nowhere in the world, independent of the time period, the levels of wealth or the degree of modernization, has fertility change took place without significant prior mortality change. (Reher, 2004, p.19).

Since the 1950s, Sri Lankan scholars have also tried to explain fertility transition as a cause of mortality transition. The fifth section of this chapter will discuss the situation in Sri Lanka.

Modernization as the cause of fertility decline

The proposition, "modernization is the cause of fertility decline," is central to the demographic transition theory, but it is highly criticized. However, the term "modernization" has a broad meaning. Therefore, different scholars used this term according to their wishes. Notestein placed stress on "urban industrial living" (1943) and later on "urban industrial society" (1953) as the context in which the social changes leading to fertility decline occurred. Later on, Notestein emphasized that modernization, which marks the transition from a traditional agrarian society to a modern urban and industrial society, encouraged the desire for fewer children among couples. He stated that;

It is nevertheless evident that urbanization is not the magic ingredient where the fertility decline is concerned. The ideal of the restricted family and the strong motivation towards fewer children arose in very varied conditions. It may reasonably be assumed that the following were among the main factors; the rise of the individual to the detriment of the family, and particularly the extended family; the development of a new mental attitude polarizing reason and secularity; the influence of progress in public education on knowledge of the world and modern techniques; the improvements of health; the emergence of alternatives to early marriage and procreation as means of existence and prestige for women. (Notestein, 1953, cited as Chesnais, 1999, p.8).

Thompson (1946) referred to industrialization as the necessary condition for modernization. However, most studies in developing countries measured modernization as socioeconomic development. A number of studies have been done in many countries to explain the fertility transition in those countries based on the FDT theory and the above propositions. However, Leasure (1962) revealed that a simple version of the demographic transition theory could not explain the history of fertility change in Spain. In his doctoral thesis, he conducted research involving 49 provinces in Spain and showed that fertility declined in contiguous areas that were culturally similar, though the level of urbanization and economic development of those areas were not the same.

Princeton European Fertility Study was the most elaborated test of demographic transition theory in the European context. Coale examined provincial-level data for the period from 1870 to 1960, and his general conclusion was that;

Certain aspects of fertility trends... appear inconsistent with or, at least, more complex than the description of fertility changes provided in the demographic transition theory (Coale, 1973, p.56).

The two key conclusions that emerged from this study were;

1. Socioeconomic conditions were only weakly predictive of fertility decline, and transitions started at widely varying levels of development,
2. Once a region in a country had begun a decline in fertility, neighboring regions with the same language or culture followed after short delays, even when they were less developed.

These findings were unexpected and could not explain such situations by the FDT theory. Similar points were made by Cleland (1985), Knodel and Van de Walle (1979), and Cleland and Wilson (1987), who were researching contemporary developing countries and historical Europe. After that, many studies have demonstrated that there is no strong relationship between development indicators and fertility. Based on these research findings, the scholars questioned the role of socioeconomic development on fertility decline and finally questioned the FDT theory. For instance, Bryant (2007) formulated three propositions for their argument about the relationship between fertility and development indicators;

1. Socioeconomic theories cannot explain fertility decline in countries with low scores on development indicators
2. The relationship between fertility and development indicators is weaker than what is predicted by socioeconomic theories
3. The relationship between fertility and development indicators has shifted because of the diffusion of new ideas.

Wilson and Airey (1999) argued on the basis of propositions one and two and stated that socioeconomic change may be relatively unimportant to fertility decline (Wilson & Airey, 1999, p.125). Cleland (2001) cited Proposition One and Proposition Two in support of the idea that mortality decline, rather than socioeconomic development, is the main driver of fertility decline (Cleland, 2001, p.87).

Further, the validity of the socioeconomic development and fertility decline explanation of demographic transition theory was highly criticized because developing countries like Sri Lanka, Vietnam and Bangladesh have achieved low fertility without such socioeconomic development. As an example, the crude birth rate of North Vietnam fell by about 20 per cent during the 1960s. It continued to fall after that, even though 10 per cent of the population lived in urban areas, per capita GDP was as low as 100 US dollars, and life expectancy at birth was 50 years (Bryant, 1998 cited by Bryant, 2007). Another example is from Bangladesh. Evidence collected from Bangladesh by Caldwell et al. (1999) suggested that parents in Bangladesh had to limit their fertility to allow investment in children's education and other family needs, and a large family is too expensive for socioeconomic development. Therefore, incentives to have fewer children can emerge in societies with low scores on development indicators.

The general criticism made about this theory is that it is based on the experience of European countries; it is inductive in origin and has a deterministic linear path along which changes in the population are expected to proceed. For example, Graham (2000) stated that "the demographic transition theory provides a general picture of change over time which was predicated on a linear view of history in which the West is the standard and further along a given path of progress. Like modernization theory, demographic transition theory, in some of its versions, denies Third World history and assumes that progress consists of achieving the characteristic condition of the West" (Graham, 2000, p.262).

Although Coward (1986), Hirschman (1994), and Leibenstein (1974) highly criticized this theory in their opinions, others, like Woods (1982), showed its advantages. As Woods (1982) mentioned, "It lacks the precision of a more limited causal theory, yet one strength may lie in this very weakness for it holds out the promise of a general historical theory which will deal with temporal and spatial changes in population structures together with their main economic and social causes." (Woods, 1982, p.158). For instance, Bongaart's and Watkin's (1996) analysis began by examining the empirical record of trends in fertility and measures of social and economic development for 69 developing countries between 1960 and 1990. They found an essential role in social

and economic development and accepted the third proposition. However, they concluded that development alone is insufficient to account for observed variations in the timing of the onset of transition or variations in their pace and that social interaction should be taken into account (Bongaarts & Watkins, 1996, p. 669).

However, demographic transition theory is applicable to various settings, and many variables affecting fertility can be incorporated because of its broad structure. A recent review of the literature by Charles Hirschman (1994) concluded: "The dilemma is that there is no consensus on an alternative theory to replace demographic transition theory". Livi Bacci (2000) raised a very similar idea. He argued that although there is considerable evidence for and against the transition model, ultimately, the debate fails to suggest an explicated model which incorporates many variables and produces a convincing result. Even in the SDT, the importance of structural changes (socioeconomic development) is still being estimated.

Second Demographic Transition Theory (SDT)

Since the 1960s, most researchers have understood that structural changes alone could not provide a complete answer for fertility transition. They emphasized the importance of studying values, attitudes, and norms regarding childbearing and family formation. The idea of SDT emerged based on this line of thinking. The SDT theory was suggested by Ron Lesthaeghe and Dirk Van de Kaa in 1986. It referred to interrelated changes in fertility, family formation, and partnership behavior. These changes were closely related to the substantial shift in values related to family life and children and were marked by the weakening of the traditional family as an institution.

The SDT is a further expansion of FDT; it explains why some countries have achieved below-replacement fertility levels. The principle demographic feature of the SDT is the decline of fertility to below-replacement levels. Based on European experience, Van de Kaa (1987) suggested four main social shifts in the typical sequence of events leading to below-replacement fertility levels. These main shifts are shown in Table 1.

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Table 1: Main social shifts from the first transition to the second transition

Social Shift	Description
First	From the golden age of marriage to the dawn of cohabitation
Second	From an era of king-child with parents to that of king-pair with a child
Third	From preventive contraception to self-fulfilling contraception
Fourth	Towards pluralistic families and households

Source: *Van de Kaa, 1987 p. 11*

But later, Van De Kaa (2002) suggested that “while below replacement fertility is currently a crucial element of SDT, this need not be a permanent state” (Van De Kaa, 2002, P.9). Several factors have been identified by demographers and social researchers which have contributed to achieving this low level of fertility. The increase in the divorce rate, the increase in age at first marriage, the increase of unmarried persons, the rise in cohabitation, and changes in values and attitudes regarding childbearing and family formation are some of these interrelated factors for low fertility. Later, the concept of SDT was elaborated upon in numerous publications, such as Lesthaeghe (1993), Van de Kaa (1994 and 2002), and Lesthaeghe and Surkyn (1988 and 2002). As a result of these elaborations, it has become a complex theory with broad explanations. The following section explains fertility transition based on SDT.

Explaining fertility transition based on SDT theory

The SDT theory also has various explanations for fertility transitions, like the FDT theory. After examining the multiple aspects of the SDT theory, Tomas Sobotka and others tried to categorize all explanations of the SDT in three distinctive ways, as mentioned below. They categorized all explanations as a broad label for several interconnected demographic changes, as a concept of such changes, proceedings in a logical and ordered sequence of stages, and as a concept of behavioral change driven by cultural and ideational changes (Sobotka et, 2003 p. 247-277).

Although Sobotka has divided his explanation into three headings, his explanation of the second demographic transition theory can be divided into two parts. The first part describes low fertility related to demographic characteristics and sequences, and the second part explains the reasons for it. Most of the explanations are based on structural changes, values, and attitudes related to family formation and reproductive behavior of childbearing.

Although some scholars criticize that the SDT theory does not discuss demographic factors, it explains interrelated demographic changes, particularly in fertility, union formation, and dissolution of marriage and living arrangements. As we mentioned above, a shallow level of fertility, or sometimes below the replacement level of fertility, is the essential characteristic of SDT. Initially, Van de Kaa (1987) also considered the decline in fertility below replacement to be the principal demographic feature of the SDT (Van de Kaa, 1987, p. 4). According to Van de Kaa, behavioral changes were characterized by four main shifts, as shown in Table 1.

The first change concerns the content of marriage. Marriage in the old style requires the official approval of the engagement, sexual relation, and family formation. Marriage in the new style takes on a new form, such as cohabitation, and no longer aims solely at procreation. Family boundaries have become more ambiguous.

The second change concerns the shift from the "era of the king-child with parents to that of the king-pair with a child." In the FDT, most of the attention went to children, but in the SDT, most of the attention went to the couple's relationship and their own, and children became secondary. The third shift concerns the use of birth control methods and contraception. According to Lesthaegh and Van de Kaa, the reasons for these shifts were due to the adoption of modern contraception, especially the pills that gave individuals almost complete control of reproduction. It played a vital role in the postponement of marriage and parenthood. The increased availability of birth control methods resulted in the separation

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of sexuality from reproduction. According to Van De Kaa, this separation enabled the individuals to achieve greater self-fulfillment, permitting greater sexual freedom and a higher quality of partnership through childbearing or the realization of one's own potential (Van De Kaa, 1988).

The fourth shift is related to a change in household patterns. Household patterns changed from uniform to diversified ones. During the FDT, children, parents, and grandparents lived together, but later, this type of living arrangement changed. The number of single-person households increased, and married couples may not reside together because of work-related reasons or other issues.

Van de Kaa conceptualized the transition as a logical sequence of stages, and each step that was taken seemed to have led to the next, and each option made a future choice possible. He suggested fourteen overviews of demographic sequence in the SDT based on Western European observations from 1965 to 1995. His fourteen overviews are;

1. Avoidance of premarital pregnancies and "forced" marriages increases.
2. The mean age at first marriage continued to decline.
3. Childbearing within marriage is postponed, fertility among young women declines, and lower-order birth rates decline; these trends accentuate the decline in the period's total fertility rate.
4. Judicial separation and divorce increase
5. Postponement of marriage is primarily replaced by premarital cohabitation and increased age at first marriage.
6. Cohabitation becomes more popular; marriage is postponed until the woman is pregnant; increases occur in premarital births and in the mean age at first birth.
7. Legislation permitting sterilization and abortion further reduces unwanted fertility; fertility at the youngest and oldest childbearing ages declines further.
8. Cohabitation gains further support and is frequently also preferred by the widowed and the divorced

9. Cohabitation is increasingly seen as an alternative to marriage; extramarital fertility increases.
10. Total fertility rates tend to stabilize at low levels.
11. Total fertility rates increase slightly where women who postponed births begin childbearing; lower-order birth rates increase at higher ages of childbearing.
12. Not all postponed births can be made up in the years of childbearing remaining for women.
13. Voluntary childlessness becomes increasingly significant.
14. Cohort fertility appears to stabilize below replacement level (Van de Kaa, 1987 p. 8, 2001 p.302)

This ideal transition scheme started with the decline in fertility at higher ages of childbearing and higher birth orders. It ended with the stabilization of cohort fertility below replacement level. However, Lesthaeghe (1995) broadly distinguished three phases of the SDT in Western Europe, linking specific changes to the period of their progression. These three phases are as follows;

1. First phase: From 1960 to 1970, An accelerated upswing in divorce, fertility decline, and delayed marriage
2. Second phase: From 1970 to 1985, the Spread of premarital cohabitation and an increase in non-marital births
3. Third phase: After 1985: A plateau in divorce rates, more post-marital cohabitation replacing remarriage, some recovery in fertility, especially at later ages, and an end to the decline in teenage fertility

Others also emphasized some demographic elements of SDT theory, such as high levels of cohabitation, extramarital birth referent from marriage, and divorce that then leads to the lowest level of fertility.

Most of the empirical studies done to test the SDT theory illustrated the widespread nature of demographic characteristics. Demographers used a number of indices, such as the index of marriage, the index of contraception, the index of induced abortion, and the index of postpartum

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fecundability, to measure demographic characteristics. These indices could explain the spatial differences of SDT.

Most of the research based on SDT theory focused on measuring demographic characteristics and sequences because they were easily measurable using secondary data sources. However, explaining the reasons behind those demographic characteristics is challenging for demographers. Although it was a difficult test, Van de Kaa (1988), supplemented by Lesthaeghe and Surkyn (1988), tried to put the whole explanation under three dimensions such as "structure," "culture," and "technology." Van de Kaa's reference to "structure" was mainly to the process of modernization and "culture" as a system of symbols (values, norms, and attitudes) or silent revolution, which has affected the broad change of values. "Technology" mainly refers to the development of all systems of techniques for making and doing things (here, basically consider birth control methods and contraceptives). According to Kaa, these dimensions are highly interdependent and interrelated (Van De Kaa, 1988, p.15). The following section describes how low fertility relates to "structure," "culture," and "technology."

Structural explanation

Like the FDT theory, the SDT theory has tentatively incorporated numerous structural changes such as modernization, the growth of the service economy and the welfare state, and the expansion of higher education. As a result of these structural changes, several significant other changes occurred in Western European society. Rise in living standards, strengthening of social security, increased functional differentiation, increased structural complexity, increased mobility, increased the overall level of male and female educational attainment, and increased female labor force were those changes mentioned by Van de Kaa (1988). Finally, because of social mobility, individuals were interested in maintaining flexibility as long as possible in terms of professional development and union formation (Van de Kaa, 1988, p.16-18). These overall changes led to a low level of fertility.

Most of the research based on SDT intended to describe the relationship between structural changes, family formation behavior, and fertility. For example, to test the SDT theory and illustrate widespread demographic characteristics associated with the SDT, Lesthaeghe (1995) undertook a macro-scale analysis of twenty-four countries with a small number of variables representing demographic, economic, cultural, and political characteristics. He found that the regional patterns of SDT differed from those in the FDT and that the regional patterns of SDT happened in a much shorter period. The differential progression of countries through the transition could, from Lesthaeghe's analysis, be explained in terms of a small number of variables. While economic indicators (for example, GNP/ capita) were significant predictors of the onset of SDT, female education and employment were also substantial.

Cultural explanation

The SDT theory examines the influence of cultural change on fertility from two different angles. The first angle is values and attitudes changes regarding marriage, family life, and children. The second angle is the lifestyle changes of the people. The SDT theory explains that the structural and technological changes in Western Europe followed the changes in values and lifestyle, ultimately leading to a low fertility level. Cultural change is considered the most critical and distinguished characteristic of the FDT and SDT theories, and that does not mean that other determinants, such as economic and social ones, are not necessary. Post-modernists used terminologies that are contradictory to each other to explain lifestyle changes from traditional to modern and post-modern: collectivism versus individualism, traditional versus secular-rational orientation, survival versus self-expression or basic material need versus higher order non-material needs, children's well-being versus parental well-being, quantity versus quality and gender difference versus gender equity. Most social scientists consider these cultural changes to be the human development syndrome, and economic development and industrialization have facilitated a shift from traditional towards modern and post-modern lifestyles. These contemporary and post-modern lifestyle preferences are associated with low fertility (Van de Kaa 1997).

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In the mid-1980s, Lesthaeghe and Van De Kaa developed the idea of the SDT. They related the fertility transition observed in Western Europe to changes in the population's value orientation and lifestyle. However, even in Western Europe, they could not establish a relationship between fertility and modern lifestyle changes. Using World Value Survey data from 1990, Van De Kaa (2001) analyzed the relationship between post-materialism and fertility. According to him, although there was a significant correlation between post-materialism and several variables of individual fertility and marital status, the relationship between post-materialism and the overall fertility transition measures was weak and insignificant. Further, he mentioned that the level of post-materialism could have been a better predictor of the current level of fertility.

Technological explanation

The SDT theory examines the influence of technology on fertility from two different angles. The first angle refers to the increased availability of effective contraceptive pills, intrauterine devices (IUD) and sterilization on fertility, and the emergence of mass media and its influence on fertility is the other angle. The use of contraceptives has also been discussed in the FDT. The era of the SDT is also sometimes called the era of "the second contraceptive revolution" (Van de Kaa, 1997, p.10) or of "the perfectly contraceptive society" (Lesthaeghe, 1995, p. 19). This revolution decreased the risk of unwanted pregnancies, increased sexual freedom, allowed couples to control the size of their families, and also led to extended postponement of the first childbirth (Van de Kaa, 1997, p. 10). That shortened the mean length of childbearing of women.

However, the involvement of mass media should have been discussed in the first demographic transition. Van De Kaa (1988) referred to airplanes, radio, television and other mass media and information and communication technology (ICT), which increasingly allowed people to obtain a wide range of information on different countries and cultures, causing them to take a fresh look at and to question their values (Van De Kaa, 1988 p.22-24). This situation has changed people's behavior significantly. Individuals responded quickly and made active decisions

based on newly acquired information. Most of the studies showed the impact of mass media on fertility change in general and contraceptive use and childbearing intentions in particular.

Contrast between FDT and SDT theories

Having pointed out the intellectual origin of the second demographic transition, more attention has been given to discussing the contrast between the FDT and SDT transition. Initially, the SDT was viewed as a mere continuation of the FDT, but such a “single transition” view obscured significant differences of both demographic and social nature. Different terms such as “basic needs to higher order needs,” materialist needs to non-materialist needs,” “child-oriented to parent-oriented,” and “collectivism to individualism” were used to conceptualize the shift from FDT to SDT in the social and cultural context.

However, Lesthaeghe (2010) tried to identify a more systematic treatment of the contrasts between the FDT and SDT. His contrasts are essential in this study because, based on his contrasts with some modifications, we have tried to distinguish different characteristics of fertility transition between rural and urban and between the older and younger generations. Table 2 summarizes his contrasts. Identifying these contrasts is essential to distinguish whether Sri Lanka is in the first or second demographic transition, and some of the variables were defined based on these contrasts.

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Table 2: The demographic and social contrast between the FDT and SDT in Western Europe

First Transition	Second Transition
Marriage	
Rise in proportions marrying, declining age at first marriage	Fall in proportions married, rise in age at first marriage
Low or reduced cohabitation	Rise in cohabitation (pre-and post-marital)
Low divorce	Rise in divorce, earlier divorce
High remarriage	Decline in remarriage following both divorce and widowhood
Fertility	
Decline in marital fertility via reductions at older ages, lowering mean age at childbearing	Further decline in fertility via postponement, increasing mean age at first parenthood, structural sub-replacement fertility
Deficient contraception, parity failures	Efficient contraception (exceptions in specific social groups)
Declining illegitimate fertility, but not necessarily among teenage women	Rising extramarital fertility due to parenthood within cohabitation
Low definitive childlessness among married couples	Rising definitive childlessness in unions
Social background	
Preoccupations with basic material needs: income, work conditions, housing, health, schooling, social security; solidarity is prime value	Rise of higher-order needs: individual autonomy, self-actualization, expressive work and socialization values, grassroots democracy, recognition by others; tolerance is prime value
Rising memberships in political, civic and community-oriented networks; strengthening of social cohesion	Disengagement from civic and community-oriented networks, social capital shifts to expressive and affective types; weakening of social cohesion
Strong normative regulation by Church and State; first secularization wave, dominance of political and social factors (“pillars”)	Retreat of the state, second secularization wave, sexual revolution, refusal of authority, waning influence
Segregated gender roles, familistic policies, embourgeoisement, promotion	

of breadwinner family model Ordered life-course transitions, prudent marriage and dominance of a single model of the family	of political factions (“pillars”) Rising symmetry in gender roles, female economic autonomy Flexible life-course organization, multiple lifestyles, open future
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Source: Ron Lesthaeghe, population, and development review, 2010 June p.246

Paradigm shift from the FDT to the SDT: Theories and approaches to explaining fertility transition

From the FDT to the SDT, the approach to studying fertility behavior has changed from structural (socio-economic and technological development) to ideational changes. Van De Kaa has tried to narrow down all the narratives of the fertility transition from FDT to SDT (see Appendix 1). Economists insist that economic factors are the engine of driving social change and affect fertility behavior. The search for the social, financial, and institutional determinants of fertility has led to research on the macro-level correlates of fertility in cross-national comparisons. Some sociologists emphasized the role of ideological factors in family change and fertility behavior. The results of the world fertility survey led Cleland (Cleland, 1985) to conclude that an ideational theory of change is more appropriate than a structural theory of family formation and fertility (Cleland, 1985, p. 243). However, his conclusion is criticized because it needs more attention to the massive structural transformation accompanying these changes. However, the SDT theory focuses on changing attitudes and values as the driving force in contemporary developments, and demographers have suggested that ideological factors are crucial at present. Most of the research based on the FDT focuses on socio-economic approaches and macro-level analysis, while the study based on the SDT theory focuses on the cultural approach. Based on the available literature, I have tried to summarize the different methods from the FDT to the SDT to explain fertility transition (see Appendix 2). These are as follows:

- i. Demographic approach to fertility decline - Notestein (1953), Davis (1963), Van de Kaa (2002), Lesthaegh and Neidert (2006), Sobotka (2008).
- ii. Economic approach and microeconomic theories of fertility transition: Leibenstein (1957), Becker (1960), Easterlin (1967; 1975; 1978), and Caldwell (1976).

- iii. Intermediate variables and proximate determinants of fertility transition - Davis and Blake (1956), Bongaarts (1978).
- iv. Sociological approach - Freedman (1963).
- v. The value of children approach - East-West Population Institute, Hoffman and Hoffman (1973), Fawcett (1978), Bulatao (1980).
- vi. Cultural approach, Value, and conceptual change - Van de Kaa (1987) and (1999), Lesthaeghe (1999).
- vii. Gender perspective - Notestein (1953), Cleland and Wilson (1987), Freedman (1979, 1982), Mason (1993, 1999), Dissanayake (2005), McDonald (1997, 2005), International Conference of the Population and Development in 1994, Mason (2001).

The two demographic transition theories and different approaches have provided essential theoretical and analytical knowledge for understanding fertility transition in the world and Sri Lanka. Based on these theoretical understandings, this researcher developed an analytical framework for the study, which will be discussed later. The following section reviews the literature on demographic transition, fertility transition, and empirical studies on fertility in Sri Lanka.

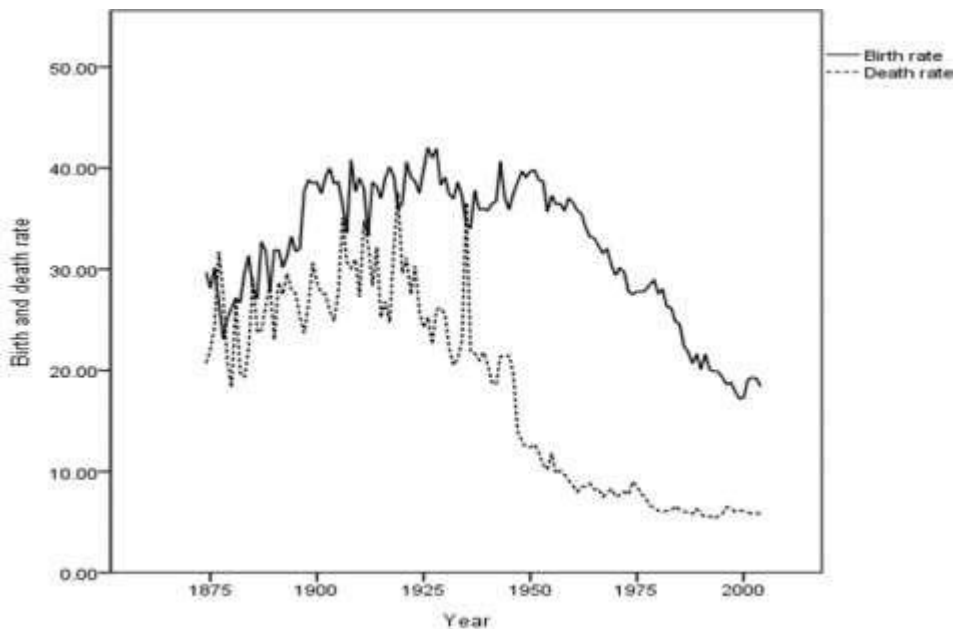
Demographic Transition in Sri Lanka

Using vital statistics, demographers, geographers, and social scientists have developed demographic transition models for Sri Lanka to explain fertility transition. Among them, the demographic transition models developed by Attanayake (1984), Danielle (1982), and Sandaratne (1975 and 2004) are taken into account in this paper because these models discuss fertility transition in the context of the demographic transition model. Dissanayake (2011) has mentioned only two studies, Danielle (1982) and Sandaratne (1975), which discuss fertility transition in the context of the demographic transition model (Dissanayake, 2011, p.55), but there are three. He has yet to include Attanayake's contribution in this regard. All scholars have discussed fertility change in the context of the stages identified in the demographic transition model.

The identification of different stages, the duration of each stage, and causal factors for particular demographic behavior differ from study to study. For instance, the demographic transition model Attanayake (1984) developed identified two stages over a one-hundred-year period from 1880 to 1980. She has included only the first two stages of the

demographic transition and has mentioned the beginning of a pre-transitional fertility decline. She describes the first stage as "pre-industrial," "pre-modern," or "stage of high growth potential," which extends from 1880 to 1946 in the Sri Lankan case. The second stage, which starts from 1946, is known as the "expanding phase" or "transitional growth phase."

Dangalle (1982) has also proposed a two-stage demographic transition model with three phases. According to Sandaratne and Attanayake, the second stage of demographic evolution in Sri Lanka started in 1946, but according to Dangalle, it began in 1924, and he has further mentioned that there are two phases in stage two. Phase one, known as the early expanding phase, extends from 1924 to 1950, and in 1950, the second phase started, known as the late expanding phase. Though Sandaratne mentioned a two-stage model of demographic transition in 1975, his recent studies in the 1980s noted the initial population growth abating, and the country entered the third phase of demographic transition in the 1990s (Sandaratne, 2004, p. 85). The demographic transition model developed by this researcher considers birth and death rates from 1871 to 2011 in Sri Lanka (See Graph 01).



Graph 01: Demographic Transition in Sri Lanka

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When this model is compared with the original demographic transition model, Sri Lanka is still in the third stage of the FDT. However, it is difficult to say that Sri Lanka is reaching the final stage of the FDT because an increasing birth rate trend has been observed unexpectedly since the late 1990s, and the gap between birth and death rates is wider compared to the European model. However, it is difficult to conclude whether Sri Lanka is in the first or second demographic transition based on behavioral changes in the birth and death rates alone. An analysis of demographic, structural, and cultural changes is essential to identify the position of Sri Lanka in the demographic transition model.

Demographic transition and fertility transition in Sri Lanka Meegama (1967), Sanderatne (1975 and 2004), Dangalle (1982), and Attanayake (1984) tried to explain the mortality and fertility transition in Sri Lanka using the demographic transition model. According to them, the high mortality during the first stage of the demographic transition was due to poor sanitation, poor health conditions, low living standards, and the unavailability of efficient medical services (Dangalle, 1984). Furthermore, Dangalle (1982) explained the contribution of diseases and natural disasters to the high death rate during that period. However, while many demographers were eager to explain the high death rate that occurred during the first stage of the demographic transition model, they were reluctant to explain the reason for the high birth rate. Nevertheless, Dangalle (1982) attempted to explain the high birth rate during that period. According to him, sexual gratification and doubts about children's survival were the main reasons for the high birth rate. He explained how sexual gratification led to a high birth rate by quoting Wijesekera (1949). As Wijesekera observed, "in the matter of sexual gratification, the wife is dependent entirely on the will and pleasure of the husband, and the obvious result is larger families" (Wijesekera, 1949, p.107 cited in Dangalle, 1982, p.5). However, the literature shows that more attention has been given to explaining the high mortality in the first stage rather than explaining high fertility.

The second stage of the original demographic transition theory started in Sri Lanka with the decline in mortality from 1924 onwards. Fredericksen (1960) observed that the country's death rate had a downward trend since at least 1905 (Fredericksen, 1960, p.865). Still, many demographers assumed it began in 1946 because the declining death rate trend started in 1919 and dramatically increased again in 1934. According to Meegama

(1967), the decline in the crude death rate in Sri Lanka began in the late 1930s, mainly due to the efforts of the medical department.

Most demographers agreed that the second stage of the demographic transition in Sri Lanka started in 1946. However, this early expanding phase of demographic transition extended until the 1950s. The most significant characteristic of this phase is the declining mortality trend in the country. Demographers have identified different reasons for the decline in mortality during this phase. According to them, the causes of mortality decline can be primarily summarized as eradicating malaria and improving health services, nutritional levels, new settlements, and welfare programs in the country. However, in the second stage, the fertility level is high, and this was due to a favorable socioeconomic environment and government encouragement. Nevertheless, fertility has declined since the 1950s, marking the beginning of the third stage of the demographic transition model. As shown in the demographic transition model, the declining birth rate and the stabilization of a low-level death rate are the main characteristics of this phase.

However, there needs to be conformity about the exact period of the fertility transition in the country. Scholars suggested different periods for the fertility transition in the country based on using other fertility measures and data for various periods. By analyzing the above studies and secondary data, we can clearly understand the exact period and reasons for the fertility transition in Sri Lanka. Based on the trends in crude birth rate from 1871 to 2010, the general trend of fertility from 1871 up to the present day can be categorized into four broader phases:

1. The first phase, from 1871 to 1895
2. The second phase, from 1896 to 1960
3. The third phase, from 1960 to 1990
4. The fourth phase, from 1991 to the present day

The first phase is denoted by the period of 1871 to 1895, and the birth rate appeared to be low, although the general trend was towards a rise. During this period, the average birth rate ranged from 26.3 to 31.7, and it was generally accepted that the low birth rate was due to incompleteness in birth registration.

The second phase extends from 1896 to 1960, and the birth rate appears to have fluctuated violently around a high birth rate of about 37.5.

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Although the crude birth rate is high during this period, a slight decline can be observed in specific years. Some demographers have explained that the decrease in the average birth rate in 1906-1910 and 1911-1915 was due to a more significant increase in population than the increase in births.

Sarkar (1957) has also pointed out that fluctuations in the birth rate during this period were due to outbreaks of epidemics (Sarkar, 1967, p. 106). He argued that in Sri Lanka, epidemics and health conditions play an essential role in determining the level of fertility both directly and indirectly. According to him, the direct influence of epidemics on fertility resulted from lowered vitality and reproductive power of men and women due to illnesses and miscarriages in pregnant women. The indirect effect of outbreaks on fertility was delayed marriage due to family members' deaths, illness situations, and economic hardships of the family. He made a careful analysis of the effects of health conditions on marriage and birth based on data from 1900 to 1949 by computing correlation coefficients between births, deaths, and marriage rates, and he finally concluded;

Epidemics and health conditions play a significant role in determining fertility in Ceylon. It may be suspected that a substantial proportion of the population live at a marginal level of nutrition and health. The hormone output and general vitality of these persons are such that they exist on the margin between sterility and fecundity as much as on the margin of life and death, and a slight change in health conditions or in the economic situation may suffice to tip the balance, resulting in the booms and depressions in fertility that we have noticed. (Sarkar, 1967, p.106).

It was also noted that with the eradication of malaria and control of other diseases, morbidity and mortality drastically reduced during this period and after the Second World War. Although the death rate declined after the war period, births increased. As a result, the crude birth rate increased from 37.4 in 1946 to 39.7 in 1948 and remained more or less at this level until 1960.

The third phase extends from 1961 to 1990. During this period, a gradually declining crude birth rate can be observed, except for the insignificant increases in 1968, 1971 and 1974. Fertility declines in this period in Sri Lanka have been investigated by several scholars. Those studies were carried out based on different periods and different fertility measures, such as crude birth rate, age-specific fertility rate, and total fertility rate.

In 1967, Jayewardene and Selvaratnam (1967), by examining the birth rate and age-specific fertility rate from 1953 to 1963, concluded that a definite downward trend in the crude birth rate had been discernible since 1960. According to them, the fertility decline was an increase in the mean age at marriage of females. However, Wright (1968) observed that fertility decline in Sri Lanka started in the early 1950s. By observing census data from 1953 to 1963, he concluded that Ceylon's crude birth rate declined between 1953 and 1963. He further identified that the decline was primarily due to changes in the age structure and marital status of women aged 15-19 years rather than fertility decline. He has also shown that the continuing decrease between 1963 and 1968 occurred despite changes in the age structure and was caused by the continuing postponement of marriage and a decline in marital fertility among women over 25 years and possibly among women over 20 years.

In 1970, Dallas Fernando analyzed fertility trends and the reasons behind them for different periods. His first study was based on the period from 1953 to 1968. According to him, factors that contributed to the decline in the birth rate in 1963 were the rise in average age at marriage and the decline in the percentage of currently married women in the age group of 25-29 years and 20-24 years as compared to 1953, and the drop of percentage share of married women in these age groups compared to women of childbearing age.

Again, in 1972, Fernando studied fertility decline in Sri Lanka based on 1963 census data and a 1969 socioeconomic survey supplemented by information from the Registrar General's Department. According to this study, the most significant contributor to the decline of the crude birth rate has been the change in the proportions of marrying. The proportion of women of reproductive age currently married was 65.2 percent in 1963, declining to 60.1 percent in 1969. The corresponding proportion, according to the 1971 census, was 59.3 percent. It was also noted that the fall in the percentage of married women in the age group 20-24 years, which accounted for about 27 percent of the country's annual births, was particularly pronounced, declining from 57.4 percent in 1963 to 42.6 percent in 1969. There was also a significant fall in the proportion of married women aged 15-19 years and 25-29 years, to which age groups

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about 35 percent of annual births could be attributed. After standardizing for changes in age and marital structure, he concluded:

"The changes in the marital structure have accounted for the whole of the decline in the crude birth rate between 1963 and 1969. Thus, changes in the marital structure have tended to reduce the birth rate while changes in the age structure worked in the opposite direction. Jointly, they tended to reduce the birth rate" (Fernando, 1972, p.342-343).

Fernando widened the scope of his analysis by incorporating urban, rural, and regional differentials in fertility in another study in 1974. The analysis revealed that urban fertility was lower than rural fertility for the census period from 1963 to 1971. Fernando (1975, 1976, and 1979) further studied the levels and trends in fertility in Sri Lanka using census data. Through these studies, Fernando attempted to establish a relationship between nuptiality, education, and infant mortality and highlighted fertility differentials.

Nanayakkara (1980) studied to understand the macro determinants of Sri Lanka's fertility and their inter-relationship using secondary data. The explanatory model was primarily based on Easterlin's framework of links between modernization and determinants of reproductive behavior. He had selected five significant modernizing aspects: better public health and medical care, growth in formal education and mass media, urbanization, new goods (consumer goods and fertility control), and per capita income growth. Out of five modernizing variables that were supposed to influence the determinants of completed family size in his model, only two variables, namely better health and education, fit the data. The remaining variables, urbanization, new goods, and per capita income growth, had an insignificant effect on fertility behavior. He has concluded that urbanization and the promotion of modern contraception had not shown any impact on reduced fertility.

Langford (1981) has studied the fertility changes in Sri Lanka at the district level since the First World War. The study revealed that from 1946 to 1953, the crude birth rate (CBR) maintained a constant level of 38.5 and then declined to 34.6 in 1963 and 27.6 in 1976. The total fertility rate (TFR) and general marital fertility rate (GMFR) also declined after 1953, but relatively less than the CBR or general fertility rate. He further pointed out that changes in the age structure and

nuptiality were partly responsible for the fall in the crude birth rate and the general fertility rate.

The three studies done by Sandaratne (1975), Dangalle (1982), and Atthanayake (1984) discussed fertility change in the context of stages identified in the demographic transition model. Sandaratne (1975), by analyzing socioeconomic variables in Sri Lanka, concluded that economic difficulties engendered by rapid population increase have been an essential factor in the subsequent decline in fertility. He also mentioned that the rapid decline in birth rates among the Indian Tamil community and factors such as postponement of marriage, urbanization, and level of education were particular indicators of fertility decline in the country.

By analyzing literature and secondary data, Dangalle (1982) mentioned that during the 1950s, population factors played a dominant role in bringing the birth rate down. In the latter part of the decline, socio-demographic factors like declining proportions of women entering marriage played a significant role. He further explained why declining proportions of women entering marriage and late marriage affect fertility. He said the fertility decline did not happen due to urbanization, modernization, or economic development. Still, the lack of development, manifested in rising levels of unemployment, low living, and other financial hardships, induced couples to postpone marriage and ultimately limit their family size (Dangalle, 1982, p.28).

Atthanayake (1984) reviewed and compared Sri Lanka's demographic experience and transition. According to her, even in the 1980s, Sri Lanka was in the second stage of the first demographic transition. In 1987, she developed a causal model and did a path analysis to explain fertility behavior in Sri Lanka using 10 percent of the data from the Fertility Sample Survey of 1971. She used 14 socioeconomic variables to develop the path model. Among these variables, significant determinants of fertility were mortality, age at the first marriage, and duration of the first marriage.

Sirisena (1984) researched to explore the relationship between development projects, social and economic factors, and fertility in Sri Lanka. In this study, 3598 married females below the age of 49 participated, and these participants were selected from the areas where identified development projects had been implemented. The analytical

framework of this study consisted of development projects, other development inputs, social and economic structure, and factors directly related to fertility. Among the selected development programs, two development programs and two combinations of several programs, guaranteed price scheme (GPS), rural electrification (RE), and project combinations of RE plus GPS and RE plus land settlement (LS), had conclusively contributed to reducing fertility in Sri Lanka. He found that the impact of land settlements (LS) and the combination of LS+GPS on fertility was inconclusive, and land settlements had the highest fertility levels.

Dissanayake (1995) explored the influence of education on the onset of fertility transition in Sri Lanka and its relationship with subsequent fertility changes (see his PhD thesis and book on "Education and Fertility: Review of theoretical approaches to explain fertility transition" (2011)). He has attempted to explain the onset of fertility transition by examining the nature of the pre-transition fertility regime and the conditions leading to the destabilization of this regime. He has identified three generations who have contributed to the onset of fertility transition and its continuance and defined them in terms of the onset of mass education: the last generation of parents with mass schooling, the first generation with mass schooling, and the second generation with mass schooling. He further contributed to the ongoing debate on the "starting, spacing, and stopping" fertility behavioral approach.

By analyzing literature and secondary data, Siddhidena (2000) has categorized the factors responsible for fertility decline into four broad categories: the change of female age composition, change in the proportion married, and change in marital fertility, diffusion of traditional and modern contraceptive methods. Furthermore, he mentioned that "although the impact of other socioeconomic factors has not been properly assessed for fertility trends in Sri Lanka. There are a number of other factors that could be suggested for the levels and decline in trends over the last decades: improving the levels of female education, decreasing infant mortality rates, heightened economic problems, expansion of the social welfare system, and increased rates of induced abortion" (p.40). Abeykoon (2006) analyzed fertility determinants in Sri Lanka using the Bongaarts model. Based on his findings, he concluded that in the year 2000, marriage, contraception, and breastfeeding each

contributed approximately one-third to reducing the total fertility rate to 1.94.

The above literature and the model of demographic transition in Sri Lanka show that the country has yet to enter the fourth stage of the first demographic transition. Although Sri Lanka has not reached the fourth stage, some summary statistics of fertility show that Sri Lanka has achieved the replacement level of fertility. By analyzing Sri Lankan Demographic and Health Surveys data from 1987 to 1993, De Silva (1994) concluded that Sri Lanka achieved the replacement fertility level in 1993. He mentioned,

Among the developing countries, Sri Lanka is often cited as an exception about its mortality transition. Perhaps very soon, it may also be cited as exceptional in its fertility transition because it seems to be clearly ahead of its fertility target. Expected to achieve replacement-level fertility by the year 2000, it had already hit the target by 1993, and fertility seems even to be falling below the replacement level (p.18-19).

Citing the projection of the Department of Census and Statistics, Siddhisena (2000) indicated that Sri Lanka would achieve a replacement level of fertility by the period of 2001-2006; however, the country achieved a replacement level of fertility by the year 2000, and he further predicted that it would further decline during the next half of the 21st century (p.53). Sanderatne (2004) mentioned, "In the first half of the 1990s, the population growth averaged only 1.5 percent per year. In the last three years (1995-1997), this population grew by only 1.3 percent yearly. The fertility rate reached a below replacement level of 2.1 in 1994" (p.89).

De Silva (2011) also mentioned that Sri Lanka had achieved below replacement level of fertility during the period 1995-2000 and predicted that the total fertility rate in the country would reach 1.5 in 2021-2026. These demographic characteristics are very similar to those of the Western world, which has reached the fourth stage of demographic transition. It is fascinating to answer how Sri Lanka has reached the replacement level of fertility before reaching the fourth stage of the first demographic transition.

However, De Silva has recently shown that the fertility decline has reversed in Sri Lanka. Citing the Demographic and Health Survey in Sri Lanka (2006-2007), he showed that total fertility is unexpectedly increasing in Sri Lanka, and it was 2.3 during the 2003-2006 period (see

his book on "Population of Sri Lanka: Increasing fertility and challenges for development" written by De Silva (2010)). As an opinion, he mentioned that decreasing age at marriage, changing social and religious attitudes, the impact of the tsunami and civil war, and deterioration of the family planning program might be the reasons for the fertility increase in Sri Lanka. According to the literature, Sri Lanka was the first country to achieve the replacement level and then experience a rise above the replacement level. Therefore, studying fertility transition and future trends in Sri Lanka is interesting.

The above literature shows that fertility has been well-reviewed in Sri Lanka. However, only some studies have attempted to explain fertility transition in the country from a theoretical perspective of DTTs. As mentioned above, these attempts were made by Sandarathe (1975), Dangalle (1982), and Dissanayake (1995). Sandarathe and Danielle explain how mortality and fertility have changed from high to low levels with the help of the FDT model. However, they primarily focus on demographic factors, especially mortality transition and marriage postponement. They do not attempt to show what factors, other than demographic factors, were responsible for the fertility transition. They tried to explain the fertility transition through historical changes in the socioeconomic background, but they reference secondary data without providing a detailed analysis.

In general, most of the studies discussed above are variable-centered, and there is no theoretical explanation for fertility transition in the country. For instance, most of the studies statistically estimate the relationship between socioeconomic background and fertility using census data from a particular time, and they have provided simple generalizations about the relationship between fertility and socioeconomic background. They question the applicability of using demographic transition theories or modernization to explain the fertility transition in Sri Lanka. For example, these studies consider only the association between fertility and determinant variables at a particular time but neglect how these determinants change over a long period. They also need to look at the interrelationship between fertility and determinant variables.

Rationale for Selecting FDT and SDT Theories to Explain Fertility Transition in Sri Lanka

The FDT and SDT theories have explained the fertility transition in the Western world. Whether we can use bas to the FDT and SDT theories to explain the fertility transition in Sri Lanka arises. However, using the FDT theory to explain fertility transition in developing countries like Sri Lanka is questionable because empirical research still needs to question how a developing country achieved meager fertility rates without significant socio-economic development, industrialization, or urbanization. Dangalle summarized this situation by stating:

According to many writers, the decline in fertility in the West was a result of the growing individualism associated with urbanization and economic advancement. In Sri Lanka, however, it was not modernization or economic development. (p. 28).

What may be the reasons for such a decline other than those explained by the FDT theory? Although the modernization process in Sri Lanka has not strictly followed the same stages of development as in Western countries, prominent cultural changes like individualism, secular rationalism, globalism, materialism, self-expression, and gender equality can be observed in Sri Lankan society. Therefore, I assume that these changes have contributed to the fertility decline in Sri Lanka, and I believe that the SDT theory is more relevant to explaining the fertility transition in the country. However, FDT and SDT are not two distinct theories; instead, they are interconnected, and SDT can be considered a continuation of FDT. Therefore, both theories are essential in explaining the fertility transition in Sri Lanka, and the analytical framework was developed using the first and second demographic theories.

Empirically, many researchers remain puzzled about the decline of Sri Lankan fertility and the causal process underlying it. Theoretically, the puzzle of Sri Lankan fertility, in particular, and of human fertility in general, is related to the fact that many existing fertility studies ignore or fail to incorporate the cultural context and its changes in fertility behavior. Although there is considerable documentation and research on the ongoing fertility transition in Sri Lanka, there needs to be more analysis of cultural and lifestyle changes, which may have a significant contribution.

Many researchers have focused on analyzing the relationship between fertility and socio-economic variables using census or vital statistics. Through correlation analysis, they concluded that there is a weaker relationship between fertility and development indicators in Sri Lanka. Based solely on an analysis of economic factors, researchers question

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how and why fertility declined in Sri Lanka without significant socio-economic development or modernization, as mentioned in the first demographic transition theory. One aspect often neglected is that modernization can occur in a country without socio-economic development and can change human ways of thinking without abstract socio-economic development. The hypothesis that Sri Lanka achieved modernization without significant socio-economic development suggests that new ways of thinking and approaches are necessary to understand fertility behavior in Sri Lanka.

Unlike the FDT theory, the SDT theory explains the reasons for low fertility and emphasizes modern and post-modern cultural and value changes. Van de Kaa (1997) argues that ideational and value changes are the most important determinants of fertility change, and value change is considered a distinguishing characteristic between FDT and SDT theories. In the mid-1960s, value orientation transformed from modern to post-modern, known as the "silent revolution" by Inglehart (1997), similar to Van de Kaa's view. However, neither rejects the importance of economic factors in fertility transition; they suggest that value change and post-modern cultural changes are the main determinants of fertility transition. These new ways of thinking identified essential changes in fertility and family formation behavior that led to low fertility levels in the Western world. These changes included an increase in the mean ages of marriage and first birth, postponement of marriage, an increase in the unmarried population, increased divorce rates, an increased number of single-person households, and a childless society.

When considering the fertility transition in a country, it is not fair to say that the fertility transition of that country is explainable using only one fertility transition theory because both characteristics can be observed in a single country. Evidence shows that Western and some North East Asian countries are experiencing both first and second demographic transitions even today. For example, FDT characteristics can be observed in some rural areas in the United States, while some urban areas show second demographic characteristics. Not only spatial differences but also ethnic-wise differences exist; a large segment of the Hispanic population is still completing its first demographic transition (Lesthaeghe and Neidert, 2006). I also hypothesize that Sri Lanka exhibits both FDT and SDT characteristics.

In the last three decades, Sri Lanka has experienced low total fertility, an increase in the average age of marriage, an increase of the average age at first childbirth, postponement of marriage and an increase in the number of divorces. By summarizing all the studies of fertility decline in Sri Lanka, Siddhisena (2000) has mentioned several crucial factors of fertility decline in Sri Lanka: an increase in female age at marriage, a decrease in the proportion of married to the total population and changes in marital fertility and diffusion of modern contraceptive methods.

These characteristics must be put under the banner of FDT because some are very similar to demographic factors described by the SDT. Although the structural changes did not happen in Sri Lanka, similar to Europe, I hypothesized that in the last three decades, Sri Lanka experienced modern-postmodern cultural and ideational changes that are described in the SDT (values and attitudes regarding low fertility and family formation). Although Sri Lanka is not structurally similar to the Western world, how we think of it is very close to the Western world.

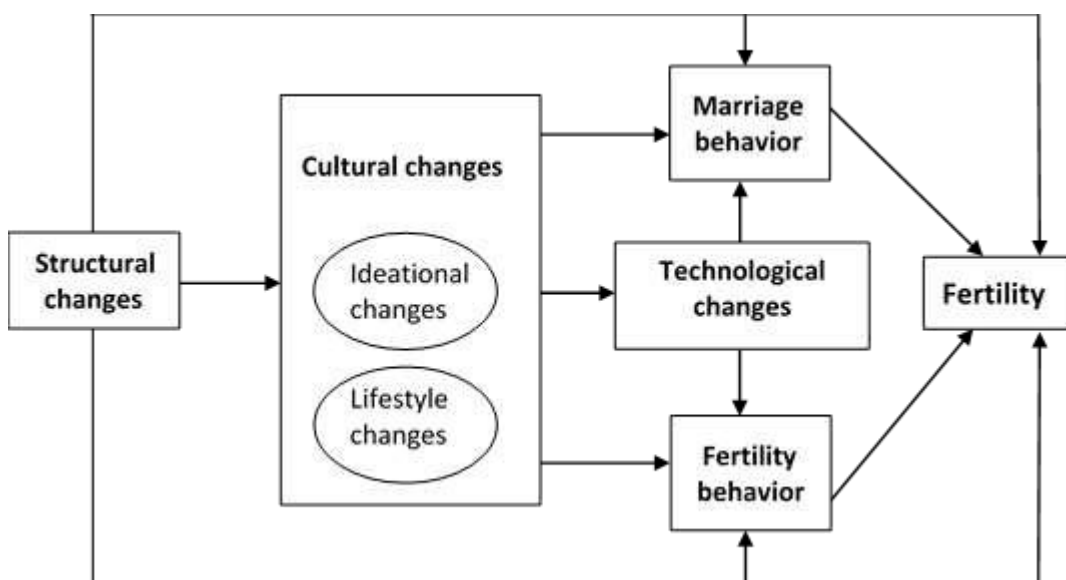
As SDT theory explains, economic growth and increasing affluence in Western society have shifted value orientations, preferences and aspirations from essential needs to higher-order needs, which is a reason for low fertility and fertility decline. Although the situation in Sri Lanka is precisely similar to Western society, during the first transitional period, the goal of the Sri Lankan parents was to give their children better opportunities for education and employment, which may be a cause of fertility control. Today, young parents in Sri Lanka control fertility because they are struggling to fulfill their well-being rather than their children. It seems that the views of the young generation are closer to the situation discussed by the SDT theory, and this has provided an opportunity to compare and contrast the transitional and post-transitional fertility changes and related factors using FDT and SDT theories.

This paper begins by introducing the FDT and SDT theories and how they attempt to explain fertility transitions in the Western world. The second section focuses on methodology. The third section focuses on the paradigm shift from FDT to SDT, emphasising the theories and approaches related to fertility transitions. The fourth section reviews fertility studies in Sri Lanka, highlighting the existing knowledge gaps. Finally, an analytical framework will be proposed to better explain Sri Lanka's fertility transition for future research.

Developing an analytical framework

The proposed analytical framework is developed by referencing FDT and SDT theories and empirical studies on fertility (Flow Diagram 01). The framework consists of six components:

1. Fertility: This is the central component and is directly determined by fertility behavior and marriage behavior. In Sri Lanka, all births occur within the institution of marriage.
2. Fertility Behavior: This component involves the choices and decisions individuals and couples make regarding family size, birth spacing, and contraceptive use.
3. Marriage Behavior: This component is closely interconnected with fertility behavior, as marriage is a crucial determinant of fertility in Sri Lanka.
4. Technological Change: Technological advancements, especially in the field of contraception and reproductive health services, can have a significant impact on fertility decisions.
5. Cultural Change: This component encompasses ideational and lifestyle changes influencing family formation behavior, including attitudes towards marriage, family life, contraceptive use, and children.
6. Structural Changes: This component includes changes in society's social, economic, and political structures that can influence fertility decisions.



Flow Diagram 01: Analytical framework

In the analytical framework, fertility is directly influenced by changes in fertility and marriage behavior, which, in turn, are connected with ideational changes in family formation behavior. However, these ideational changes can only be expected with structural, technological, and cultural changes. As shown in the framework, these three factors are directly and indirectly related to fertility. The following section will discuss each component of the analytical framework in detail.

Fertility

The estimated number of children per family is the response variable for most fertility studies. While fertility is typically defined as the number of children per woman aged 15 to 49, different conditions of estimation lead to various fertility measures. For instance, the estimated fertility may differ for those who have completed childbearing and those who have not. Using the actual number of children of those who have not completed childbearing as the fertility figure might underestimate the actual value, as they may have more children in the future. Hence, instead of relying on a single fertility measure, this study employs several fertility measures, including:

1. The actual number of children of ever-married women
2. Actual number of children of those who have completed childbearing

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3. Actual number of children of those who have not yet completed childbearing
4. Expected number of children of those who have not yet completed childbearing
5. Preferred number of children.

Given that the study's sample comprises participants at various stages of childbearing, using multiple fertility measures is appropriate.

Fertility Behavior

The second component, fertility behavior, encompasses variables related to the initiation, spacing, and cessation of childbearing. Fertility is sensitive to changes in fertility behavior, making it essential to study variables such as waiting time for first childbirth, mother's age at first childbirth, length of birth intervals between consecutive children, average age difference per child, length of fecundity, and mother's age at last childbirth as criteria.

Marriage Behavior

Marriage behavior can also influence fertility, especially in countries where childbearing predominantly occurs within the institution of marriage. Factors such as age at first marriage, proportion of married individuals, marriage dissolution, and remarriage significantly influence fertility. Changes in marriage institutions, including increases in marriage dissolution, childbearing beyond wedlock, same-sex marriage, and higher rates of remaining single, have been discussed in the context of fertility decline in Western countries. Some of these institutional changes have also been examined under the second demographic transition theory, suggesting that both behavioral and institutional changes in marriage can contribute to fertility decline in Sri Lanka.

Technological Changes:

The introduction of effective contraceptive methods and their diffusion among the population have had a considerable effect on fertility. FDT and SDT theories explain fertility transition because of the introduction of contraceptives, and various researchers have emphasized the success of Sri Lanka's family planning program in introducing new contraceptive methods. However, the success of the diffusion of these technological changes is influenced by ideational and lifestyle changes. Moreover, technological changes can also influence marriage and fertility behavior.

Technological changes in this context include awareness of contraceptives, contraceptive usage, and types of contraception, age of first use, and reasons for contraceptive use or non-use.

Cultural Changes: Ideational Changes and Lifestyle Preferences

The SDT theory attributes the fertility transition in the Western world to ideational changes regarding marriage, children, and family life. Therefore, it is essential to study ideational and lifestyle changes in this research, as the fertility transition in Sri Lanka may be influenced by shifts in values, attitudes, and norms concerning children, marriage, family life, divorce, abortion, and contraceptive use. Although research on "the values of children" is prevalent in fertility studies, the impact of ideational changes on the fertility transition has not been extensively explored. However, this study recognizes the significance of these dimensions in fertility research, as values and attitudes directly affect fertility. Additionally, lifestyle preferences discussed under the SDT are integrated into the analytical framework, as they directly influence marriage and fertility behavior. The SDT explains that the fertility transition in the Western world occurred alongside the shift from traditional to modern lifestyle preferences, referred to as cultural changes. Seven cultural domains are selected to study the shift from traditional to modern lifestyle preferences, and they are as follows:

1. Collectivism versus individualism
2. Traditional versus secular rational
3. Nationalism versus globalism
4. Survival versus self-expression
5. Basic material needs versus higher-order needs
6. Children's well-being versus parent's well-being
7. Gender difference versus gender equality

Each domain has two opposing ends, representing traditional and modern/post-modern lifestyle preferences. The participants' preferences may fall anywhere between these two ends, quantifying their relative positions regarding attitudes. The participants' preferences towards traditional or modern/post-modern ends can be determined by quantifying and measuring lifestyle preferences under each domain. Their relationship with fertility can be assessed once the lifestyle preferences are quantified and measured.

Structural Changes

Like the FDT theory, the SDT theory has also tentatively incorporated numerous structural changes, such as modernization, the growth of the service economy and welfare state, and the expansion of higher education. These structural changes have led to various transformations in Western European society, including a rise in living standards, strengthened social security, increased functional differentiation, heightened structural complexity, enhanced mobility, elevated overall levels of male and female educational attainment, and increased female labor force participation. These overall changes can be linked to the low level of fertility observed in these societies.

Conclusion

This study critically examined the applicability of the First Demographic Transition (FDT) and Second Demographic Transition (SDT) theories to Sri Lanka's fertility transition. Sri Lanka's demographic evolution presents a unique case, achieving below-replacement fertility despite not undergoing the same socio-economic transformations seen in Western nations. The FDT's focus on modernization as a driver of fertility decline does not fully explain this trend in Sri Lanka, where structural changes like urbanization and industrialization were less pronounced. Instead, the SDT theory, which emphasizes cultural and ideational shifts, provides a more comprehensive framework for understanding the country's demographic transition. Cultural changes in values, lifestyles, and attitudes toward marriage and family formation seem to play a pivotal role in Sri Lanka's fertility decline. Thus, a combined analytical approach incorporating both FDT and SDT elements is essential for explaining fertility patterns in Sri Lanka and can serve as a model for future studies on fertility transitions in other developing nations.

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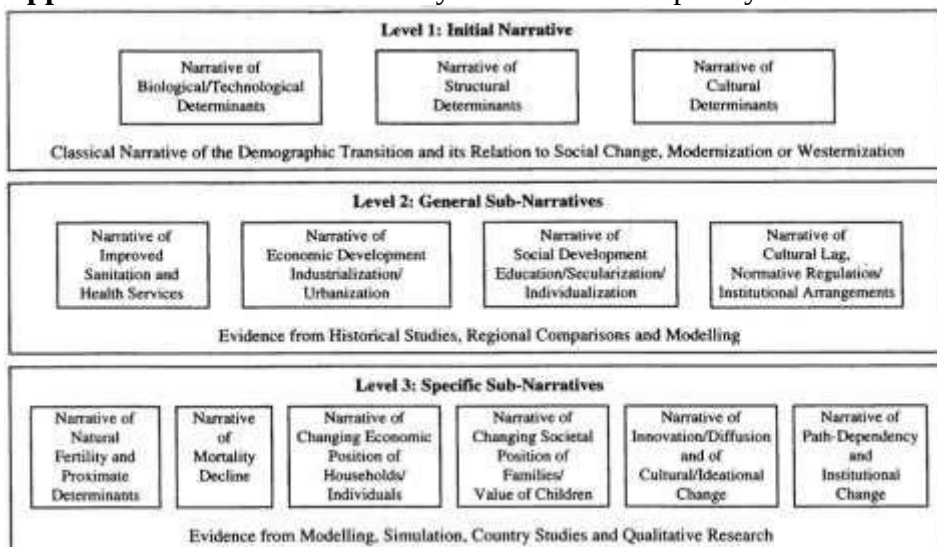
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Appendix

Appendix 1: Narratives of fertility transition developed by Van De Kaa



Source: *Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague, The Netherlands*

Appendix 2: Approaches to explaining fertility transition from first demographic transition to second demographic transition

Approaches	Contributors	Main focus
Demographic approach to fertility decline	Notestein (1953), Davis (1963) Van de Kaa (2002), Lesthaegh and Neidert, (2006), Sobotka (2008)	Explains fertility and the mortality relationship under the first demographic transition and the interest in mortality-fertility link have faded after Notestein and Davis contributions. Explains fertility and migration relationship under second demographic transition once again, Sobotka emphasized the importance of demographic dimension for second demographic transition theory
Economic approach and micro economic theories of fertility transition	Leibenstein (1957), Becker (1960), Easterlin (1967; 1975; 1978), Caldwell (1976)	Description of fertility transition has changed from macro level to micro level. Micro economic theories explained individual fertility behavior by focusing on price, time, income, and taste within households. The groundwork for microeconomic theory was laid by Leibenstein and later developed by Becker. It became the core of the 'new household economics'. Under this

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		theory child are considered as a "consumption good", "productive unit" and "source of security" and parents make a rational choice to have children of their own. Becker considered children to be the same as household commodities, and argued that the household choice of fertility is made in the same manner as in the case of the purchase of durable goods. A couple's decision to have an additional child, according to Becker's point of view, depends on the balance of its preferences, the constraints of its income and the costs of the child. Easterlin and Crimmins extended Becker's new household economic theory by adding the supply side of fertility and the cost of fertility.
Intermediate variables and proximate determinants of fertility transition	Davis and Blake (1956), Bongaarts (1978)	They tried to describe factors which influence fertility directly with the help of intermediate (indirect) and proximate (direct) variables. Proximate determinants of fertility are marriage patterns, patterns of sexual activity, duration of breastfeeding, number of induced abortions, level of sterility and percentage of couples using contraception. Income, employment, education, health etc. can be considered as intermediate variables. Later they tried to combine both proximate determinants and intermediate variables in their model.
Sociological approach	Freedman (1963)	The sociological approach, tried to find out how social values, attitudes and norms relate with fertility. Most of them have focused to identify values, attitudes and norms regarding child, child bearing and use of contraceptive and later it has changed family formation and sexual life. Freedman identified that the couple's reproductive decision become highly affected by family size norm embedded in their society due to the explicit or implicit social rewards or penalties constructed by these social organizations related with the number of children they have
The value of children approach	East-West Population Institute, Hoffman and Hoffman (1973) and Fawcett (1978), Bulatao (1980)	The basic idea in the value of children approach is to study childbearing decision-making by simultaneously considering economic factors, normative factors and psychological factors. This approach attempted to assess how positive values (satisfactions) against negative values (cost) relate to fertility. They believed that net value directly affects the couple's reproductive motivations and decisions.
Cultural	Van de Kaa,	They challenged economic theories of fertility and

approach Value and ideational change	(1987) and (1999); Lesthaeghe, (1999)	discussed the issue of the relationship between culture and fertility. The term of 'culture' has been used in a variety of ways from the first demographic transition to the second demographic transition. The studies which are based on the first demographic transition has used culture as a religious doctrine, moral code, law, education, community customs, marriage habits and family organization. The theory of the second demographic transition refers culture as secularization, the rise of individualistic values, the important of self-expression and self- fulfillment. With the structural and technological change in Western Europe their values and attitudes have changed from altruistic to individualistic and this led to a low level of fertility.
Gender perspective	Since 1950s Notestein, 1953 Cleland and Wilson, 1987; Freedman 1979, 1982; Mason, 1993 Mason, 1999, Dissanayake, 2005) McDonald (1997, 2005), International conference of the population and development in 1994 Mason (2001)	This approach has been developing since 1950s. The first demographic transition described women's new interest and ability to find extra domestic employment is one of the reasons why industrialization and urbanization have produced fertility transition. They concluded that women's empowerment facilitates the spread of information about or the ability to adopt fertility regulation. Mc Donald introduced gender equity model to explain fertility transition. Mason agreed that the "gender equity" as a critical factor for fertility decline. She suggested that there is a need to create the theory of gender and fertility transition that can identify specific forms of power or autonomy needed for lower fertility. The findings from her study of women's empowerment and demographic change which is designed to test the idea that empowering women reduces their fertility levels conducted in Asian communities. She proposed anthropological research to understand the relation between gender equity and fertility

**A Social Anthropological Review on the Cult of Goddess Pattini
(With Special Reference to Pattini Dewalaya, Sri Dalada Maligawa,**

Kandy)

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Abstract

Deity worship has become highly popular among Buddhist laypeople in Sri Lanka due to the emergence of "Popular Buddhism," which developed by integrating aspects of Mahayana Buddhism into Sri Lanka's pre-existing Buddhist culture. The Pattini cult, one of the female deity cults in Sri Lanka, originated within this context and attracts devotees from various religious backgrounds. This study aims to review the concept of deity veneration and the Pattini cult within the Sri Lankan context and investigate the significance of the Pattini cult among Buddhist laypeople. The data were collected through interviews and observations, while secondary data were gathered from archival sources. The data were analyzed using thematic analysis. The findings indicate that deity worship was originally unfamiliar to the lay Buddhist community in Sri Lanka. However, as Hinduism spread across the island, deity worship gradually became accepted among Buddhists. The goddess Pattini is revered as a protective deity, and Sinhala Buddhists commonly seek her help with issues related to women and children. Buddhists often worship the goddess Pattini to fulfill various objectives, particularly those associated with healing, promoting health, reducing marital

infidelity, ensuring marital stability, achieving economic goals, enhancing livelihoods, succeeding in exams, and raising and protecting children.

Keywords: Pattini cult, Deity worship, Hinduism, Buddhist laypeople, Popular Buddhism

Introduction

The cult of the goddess Pattini is a cultural practice that exemplifies the Buddhist-Hindu synergy in Sri Lanka. Although female deities are generally undervalued in Sri Lanka's patriarchal society, the Pattini cult has gained popularity among laypeople, particularly those connected to both Hindu and Buddhist traditions. The goddess Pattini is revered as a protective deity, especially concerning issues related to women and children. The cult of Pattini has been integrated into Sri Lankan Buddhist culture by introducing Mahayana Buddhism, which blended the Tantric elements of Mahayana (Thanthrayana) with Theravada Buddhism (Obeysekere 1988). Furthermore, the cult plays a crucial role as a cultural placebo within the healing practices among Buddhist laypeople. Today, rituals and practices associated with the Pattini cult are observed among both Sri Lankan Buddhist and Hindu communities, and it has become a significant part of Sri Lankan cultural heritage.

The veneration of deities is a key practice in Hinduism, where Maha Brahma (the Great Brahma) is considered the creator of the world, an almighty being who shaped the world according to his will. In this tradition, a variety of gods and goddesses are represented in the Brahminical concept (Keshavadas, 1988). In contrast, Buddhist

philosophy does not emphasize the worship of deities as essential for achieving life's goals, though it does not entirely reject the concept of deities. Instead, Buddhism teaches adherence to a moral and ethical life as a means of spiritual progress. The guidance needed to practice authentic Buddhism is provided by the Buddhist clergy.

In contemporary Sri Lankan society, the role of Buddhist monks and their responsibilities to society have become subjects of debate. The advice, guidance, and instructions from Buddhist monks are often regarded as essential for maintaining peace and security within society. However, several scientific studies on human social behavior have examined how religious activism can sometimes contribute to social conflicts. These studies highlight the rise of Sinhala-Buddhist nationalism as a significant factor. Furthermore, the involvement of Buddhist monks in politics, employment, and organizations that promote Sinhala identity is seen as diverting them from their traditional responsibilities, potentially impacting their role in fostering harmony (Tambiah, 1992; Seneviratne, 2002).

The objectives of Buddhist philosophy in Sri Lanka appear to have deteriorated to some extent. Religion plays a significant role in addressing issues that impact people's daily lives, offering peace and guidance during challenging times. All world religions, including Buddhism, have teachings aimed at promoting human well-being and liberating people. However, it is evident that today, religion often serves various self-centered objectives.

Worship of Gods and Goddesses in Sri Lankan Society

In Sri Lanka, numerous social and anthropological studies have examined the influence of religion on human behavior and interactions, especially around revered religious shrines. (Gombrich 1971, Pfaffenberger 1979, Obeysekere 1984, Gombrich and Obeysekere 1988, Tambiah 1992, Senevirathne 1979, 2002). This phenomenological study specifically explores the cult of the goddess Pattini, focusing on how people seek solace in religion rather than religion serving people's needs. It also considers how this inclination impacts people's ability to address their problems and contribute to a peaceful society.

Religious literature indicates that Sri Lankans have a strong inclination to worship these deities, and Indian Brahmin religious beliefs and traditions have significantly influenced Sri Lanka since the arrival of Prince Vijaya. The term 'Dewa,' meaning 'God,' was first used by the Aryans. The word 'Dewa' derives from the Sanskrit term meaning 'bright,' which reflects its association with brightness and light. Many deities were identified by the Aryans in Bharatha, with many attributed to natural phenomena (Ven. Wajirabuddhi 2007: 10).

Robert Knox noted, "When villagers encounter difficulties, they often turn to the altars of their gods, making offerings while explaining their situations in hopes of receiving divine blessings. They promise to perform sacrifices and make offerings to the gods once they are relieved of their troubles. These promises may include land, cows, money, or other objects. They seek God's assistance as if the gods were physically present. This promise of offerings reflects their expectation that the gods

will provide relief to those in need. If relief is not granted, however, they may blame the gods, inappropriately addressing them” (Karunaratne 1972: 2005).

The concept of deity is not neglected in Buddhist philosophy. Significantly, Sinhala Buddhists have been inspired to believe in God. Buddhist teachings, including the Chanda Paritta, Suriya Paritta, Dajagga Paritta, Maha Samaya Sutta, and Atanatiya Sutta, directly address the existence of gods, while the Dhamma Chakka Pavattana Sutta acknowledges the validity of belief in gods.

During the Gampola period, King Buwanekabahu invited Soli Brahmins, who introduced sacrificial practices. These practices continue to influence Sri Lankan society today. Similarly, during the reign of Seethawaka Rajasinghe, priests from Andhra and wise men associated with Shiva helped establish various beliefs in gods linked to Yaksha sacrificial practices. As a result, the belief in gods began to spread among villagers with minimal knowledge of Buddhism.

The popularity of belief in gods in Sri Lanka increased with the arrival of North Indians. Temples dedicated to gods (Dewala) were built, and various offerings and rituals were conducted. Notably, terms like ‘Siv Maha Dewala’ or ‘Siv Deviwaru’ were not commonly used in Sri Lanka at that time (Dharmadasa and Thundeniya, 1994).

It can be argued that Buddhists, by adhering to their beliefs, have contributed to a reduction in social conflicts (Tambiah, 1992). When examining the Sinhala Buddhists' inspiration to believe in gods, it is essential to consider the social conflicts and complexities within their

societies. Additionally, social changes should also be taken into account. Individuals are typically born into a particular religion, but some religions have been introduced through immigration. Therefore, it is significant to investigate the factors that inspire people to embrace beliefs beyond their birth religion. Socio-anthropological studies suggest that one primary reason for this is the loss of the core objectives of their religions. Consequently, this background has led to feelings of depression, as well as family and social conflicts. The inability to find solutions to these troubles has further exacerbated their situations.

Hindu-Buddhist Multiculturalism

The concepts of gods and goddesses are central and popular in Hinduism (Gombrich and Obeyesekara, 1988; Pfaffenberger, 1979). Tamil Hindus tend to perceive gods and religion as an integrated belief system, practiced according to the individual's needs. In contrast, the beliefs of Sri Lankan Sinhala Buddhists regarding the divine are influenced by Indo-Aryan traditions (Adhikaram, 1952; Obeyesekara, 1984; Dharmadasa and Thundeniya, 1994). Sociological evidence indicates that belief in gods in Sri Lanka encompasses a pantheon of deities. Notable examples include Hatharawaram Devi, Dewole Hathkattuwa, Bandara Hatahath Kattuwa, and Dolaha Dewiwaru (Obeyesekara, 1984). Many Sinhalese people embrace the worship of gods and goddesses alongside their Buddhist practices. For Sinhalese Buddhists, the belief in gods and Buddhism represents two distinct concepts, whereas for Hindus, these beliefs form a cohesive whole.

The concept of Goddess Pattini in the Sri Lankan Buddhist context is primarily informed by the Tamil poem *Inloko Aadikal*, which details the

birth of the Pattini deity. The Sillappadikaram describes Pattini as a respectable woman embodying chastity. The belief in Goddess Pattini was introduced to Sri Lanka in the 5th century BC and later during the 16th century. The worship of Goddess Pattini was brought to Sri Lanka through South Indian Buddhist traditions during the Kotte period (Obeysekara, 1984).

Goddess Pattini



(Sources: <https://en.wikipedia.org/wiki/Pattini>)

In the worship of Goddess Pattini, she is regarded as a symbol of motherhood. Among Sinhala Buddhists, she is affectionately referred to as *Mother Pattini* or "Pattini Meniyo." Over time, the story of the Pattini deity has diverged from the narrative found in the Silappadikaram, particularly within the context of Sri Lankan folk tradition. According to

these Buddhist folk traditions, Pattini is viewed as a Bodhisattva destined to attain Buddhahood as a male (Gombrich and Obeyesekere, 1988).

Although not explicitly mentioned in Sri Lankan sources, the *Silappadikaram*, a work of Tamil literature, references the Sri Lankan worship of Goddess Pattini and describes the relationship between King Gajaba and India (Bharatha). As a result, King Gajaba played a significant role in participating in a festival dedicated to Goddess Pattini. It is noted that during this festival, 12,000 Sinhalese were taken to the Chola Kingdom as slaves, along with 12,000 Cholas, relics such as the anklets of Goddess Pattini, and various pieces of jewelry brought back to Sri Lanka (Amarasinghe, 2004).

Several customs, formalities, and beliefs that shape the culture surrounding Pattini worship warrant an in-depth exploration of human behavior. From the veneration of Goddess Pattini, various customs and traditions, including white magic (*Shanthikarma*), have emerged. Collectively, these practices are referred to as *Pattini Adahilla*, signifying the faith in Goddess Pattini.

According to Frazer's *The Golden Bough*, the evolution of religion can be categorized into three specific periods. However, the progression of religion in human society is complex and cannot be strictly delineated. In folklore, it is said that Goddess Pattini, known for her chastity, has had seven births: first from the water, then from a flower, next from the tears of a cobra, from the bark of the Kaduru tree, and finally from a drop of water, as mentioned in the *Pattini Yaddinna*.

Goddess Pattini is believed to provide blessings, particularly for small children and women. She is considered the patron goddess of fertility, smallpox, and health. Devotees make promise offerings to her, believing her to be a noble deity (Amarasekara, 2004: 108). The history of Sri Lankan Buddhism, as recorded in the Pali Attakatha, does not refer to offerings made to gods. Ven. Buddagosha, in the 5th century, emphasizes living according to the noble threefold path. Apart from this, there has never been a practice of making offerings to gods among ancient Sinhala Buddhists.

The arrival of 12,000 Soli prisoners in Sri Lanka during the reign of King Gajaba I led to the adoption of the worship of deities such as Shiva, Vishnu, Karthikeya, and Pattini, contributing to the popularity of these practices among Sri Lankans (Adhikaram, 1946: 90).

Since ancient times, the goddess Pattini has inspired belief among the people of Sri Lanka. During the Anuradhapura period, the arrival of the North Indian Pandu Pandiyans marked the spread of Hindu beliefs in Sri Lanka, significantly impacting the expansion of religious worship. Buddhist literature mentions Satharawaram Devi¹, who, according to Buddhist belief, was appointed by Shakra, the lord of the gods, to oversee the four cardinal directions: Drutarashta for the East, Wiruda for the South, Wirupaksha for the West, and Vaishrawana for the North.

During the Kandyan era, four deities — Natha, Vishnu, Katharagama, and Pattini — were regarded as the lords of the four temples or *Dewala* (Ven. Indrarathana, 1984: 233). The worship of the goddess Pattini

¹ Dhruatarashta, Wiruda, Wirupaksha, Waishrawana

among the Sri Lankans can be traced back to the time of King Gajaba (112-134 CE). Pattini, originally the wife of Prince *Kovalam*, was deified after her exemplary character and lifestyle left a significant impression on King Gajaba, who participated in a ceremonial festival hosted by the King of Kerala.

To promote the worship of Pattini, King Gajaba brought to Sri Lanka several significant items, including the silver anklet, weapons associated with the four gods, and a chalice. The first literary source mentioning the belief in the goddess Pattini, the *Kokila Sandesha*, dates back to the Kotte period (Obeysekara, 1984).

According to folklore, the goddess Pattini was born through abiogenesis. It is also noted that Pattini underwent five births in seven different ways, as mentioned in the *Dewol Madupura* speech. Sri Lankans refer to the goddess Pattini in two forms: *Sath Pattini* and *Dolos Pattini*, and they perform offerings accordingly to the following Pattini goddesses:

1. Uramala Pattini
2. Karamala Pattini
3. Gini Pattini
4. Dewol Pattini
5. Saman Pattini
6. Aira Pattini
7. Siddi Pattini

Additionally, the birthplaces of *Dolos Pattini* are referenced in folklore (Amarasekara, 2004:118).

Aspirations of the Pattini Cult among Buddhist Laypeople

Based on the data, it can be determined that the aspirations of the Pattini cult among Buddhist laypeople in Sri Lanka are primarily motivated by egoistic reasons related to the healing of diseases and the material development of life.

Healing and Health Well-Being

People believe that the goddess Pattini has the power to cure various illnesses and diseases². She is thought to bless small children and protect them from ailments and rashes. When a child dies, it is the mother who suffers the most, leading many to believe that the Pattini deity embodies a motherly affection. When a family member falls ill, offerings and vows are made to the goddess Pattini in hopes of receiving her blessings. This sentiment is illustrated in Interview 6.

I come to Pattini Dewalaya often. These days my child has been sick. He is a three-year-old son. I came today to vow on behalf of my child. He has smallpox on his body, and we have been giving him English medicine continuously. I came today to seek blessings by informing the chief priest. (Interview 06).

Before this statement, there was an incident involving a mother whose daughter's marriage was delayed. In this interview, the small child's illness has become the reason for the offering to Goddess Pattini. It is

² The infections spread from water, air, touch and animals were identified as “Deiyange Leda” by the ancient villagers. These infections are also identified as “*Ammawarunge Leda*”. At present, small pox, chicken pox, measles, are of this kind. Various methods are taken to keep the infected separate and ‘*Kohomba*’ wreath is kept outside the house to prevent the spread of the infection and as a sign for the people.

noted that the child is three years old, an age at which children often experience such skin infections. In certain instances, people refer to these infections as *Deiyange Leda*. During such times, people generally expect blessings from the divine and tend to perform offerings.

The practice of seeking medical treatment alongside worshipping the deity is also mentioned, indicating that belief in God is not solely for healing from infections. This demonstrates a blend of traditional beliefs and scientific understanding. According to Malinowski³, the main purpose of every society is its continuation. His research focused on the people of the Trobriand Islands, who integrate both traditional beliefs and scientific knowledge into their daily lives. For example, it is a mandatory practice for fishermen to chant over a fish-shaped wooden piece and throw it into the sea before sailing. They also rely on constellations to navigate in deep waters and use spells to deter birds, insects, and wild animals from agricultural fields, in addition to building strong wooden fences around their farms. In both cases, a combination of traditional beliefs, science, and technology is employed.

Interview 6 highlights the significance of gaining blessings from Goddess Pattini for healing infectious diseases. Pleading or confessing to God is noted in other interviews as well, but in this instance, the chief priest or Kapumahatha serves as a mediator. This is because the chief priest maintains a close relationship with the deity. This situation illustrates that faith is directed not only toward the goddess but also toward the person who represents her. Goddess Pattini is highly regarded by the people for

³ B. Malinowski, 1948, *Magic Science and Religion and Other Essays*, Free Press, New York.

her ability to heal infectious diseases and alleviate troubles for women related to Kalukumaraya (Dharmadasa and Thundeniya, 1994).

Reducing Marriage Delays and Their Sustainability

The expectation of individual marriages is a significant factor that tends to promote the worship of the Pattini cult. Marriage is a universal concept that occurs in every society around the world. Sociologists and social anthropologists have provided various insights into marriage⁴. People often turn to the Pattini cult to fulfill their marriage needs, irrespective of provincial boundaries. Interviews reveal that women, in particular, have a strong belief in the Pattini cult.

I have great faith in Goddess Pattini. I feel very relaxed when I visit this place. People come here without any differences. I sense some invisible truth here. I used to come here with my daughter, and today, I came to vow for my daughter's marriage to happen without delay. (Interview-02).

Parents have the responsibility to arrange marriages for their children when they reach the appropriate age. In contemporary society, many marriages are based on love affairs. This interview exemplifies the notion that marriages occur with the willingness of parents. Various factors are

⁴ According to Kathleen Gough marriage are a relationship established between a woman and one or more other persons that provides that a child born to the woman under circumstances not prohibited by the rules of the relationship and is accorded full birth status rights common to normal members of the society or social stratum Kathleen E. 1993, *The Nayars and the Definition of Marriage in India*” **Family Kiihip and Marriage in India**, Edited by Patricia Uberoi, Oxford Delhi University Press
“Marriage is a special combination of the customs and traditions of the society. The elder man and woman have their intercourse and is given birth to an offspring. Marriage is an organization of the married and their relatives.”Nanda, Serana, 1980, **Cultural Anthropology**, D. Van Nostrand Company, New York

discussed between the two parties, such as dowry, caste, horoscope compatibility, and the area of residence, which are commonly cited as reasons for marriage delays. When considering unmarried women in Sri Lanka, the reasons often do not stem from a dislike of marriage or a lack of suitable partners; instead, they reflect limitations in entering married life. Issues related to employment and property ownership often contribute to delayed marriages or lifelong singlehood (Gamage, 1986: 30). Parents' inability to marry their children at the right age can lead to feelings of discontent. The statement, "I feel very relaxed" when at the Dewala premises, suggests that parents experience discontent and a lack of mental peace at home. The delay in their daughter's marriage can adversely affect the mental well-being of the mother and disrupt family harmony.

Edward Sapir's assertion that "the impermanence of daily life and the continuous effort to find relaxation from agitation is one's religion" resonates with this interview. The necessity for mothers to ensure their daughters marry soon is emphasized. Typically, children's marriages occur with parental agreement, and the mother's involvement is particularly evident in the performance of offerings and vows before the marriage. This ongoing participation in religious activities fosters a sense of spirituality.

In modern society, marriages based on individual choice are increasingly common, alongside arranged marriages agreed upon by parents. The perceived inability to receive divine relief, or the delay in such relief, may prompt continued involvement in religious practices. This suggests

that costly religious observances do not negatively impact their livelihoods.

Sociologist Weber notes that many religions and belief systems have presented invisible powers or supernatural ideas associated with the afterlife. He explains that individuals often struggle to achieve physical and economic stability, leading to the idea that capitalism, which emerged in Western societies, has not materialized in South Asian countries.

I came with my daughter to vow for the hope of securing a good job for myself and a successful marriage for her. I offered some fruits to the gods and wished for her to have a fulfilling married life and a good partner. (Interview 10)

Examining Interviews 02 and 10 reveals that the relationship between mother and daughter is strengthened through shared ideas and participation in worship and offerings. In today's society, many children are increasingly distanced from their parents due to factors such as working parents, urban living, smaller family sizes, and the prevalence of the nuclear family system (mother, father, and two children). The emphasis on education and the restlessness of modern life have contributed to this weakening of familial bonds. However, religious practices have played a significant role in bridging this gap and fostering closer relationships.

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Sociologist Durkheim⁵ noted that religion fosters social integration. This study focuses on the mutual relationship between a mother and daughter who share a common purpose in their religious activities.

Robert K. Merton⁶, a prominent social anthropologist, highlights that both manifest and latent functions are involved in performing prayers. Such religious activities help to restore or re-establish social bonds. Faith⁷ in the divine has inspired people to worship the goddess Pattini, as religion serves to instill a sense of belief among individuals. The main religions present in society emphasize the importance of having faith in oneself. This possession of faith significantly influences the worship of deities.⁸ Ralph Turner's perspective on the origin of religion suggests that

⁵ According to Durkheim, religion has four main characteristics. A unified system of beliefs and practices relative to sacred things that is to say, things set apart and forbidden—beliefs and practices which unite in one simple moral community called church, all those who adhere to it.

⁶ Merton has introduced the concepts of manifest and latent functions. These two terms have also been important to functional analysis. In simple terms, manifest functions are those that are intended, whereas latent functions are unintended. In this study of worshipping of goddess Pattini, the offerings of cloth, fruits, plants and prayers are manifest functions. Through this the relationship among the unknown is generated, religious beliefs are revived and the relationship between mother and child is strengthened which are latent functions.

⁷ Faith, derived from Latin *fides* and old French *field*, is confidence or trust in a person, thing, or concept. In the context of religion, one can define faith as "belief in God or in the doctrines or teachings of religion". Religious people often think of faith as confidence based on a perceived degree of warrant, while others who are more skeptical of religion tend to think of faith as simply belief without evidence

⁸ **In Buddhism**, faith (Pali: *saddhā*, Sanskrit: *śraddhā*) refers to a serene commitment to the practice of the Buddha's teaching and trust in enlightened or highly developed beings, such as Buddhas or *bodhisattvas* (those aiming to become a Buddha). Buddhists usually recognize multiple objects of faith, but many are especially devoted to one in

it arises from the faith present in human minds, which aligns with this discussion. Religion can be understood as a collection of interrelationships, states, and norms that emerge from faith and the reverence associated with sacred and supernatural elements (Kumara, 2008).

Achieving Economic Aspirations and Livelihood Development

Having a stable occupation is essential for achieving a stable livelihood. Traditionally, agriculture has been the primary occupation in conventional society. Since ancient times, people have developed certain belief systems and imbued agricultural practices with cultural traditions aimed at sustenance. This is referred to as Traditional Agriculture (Ubeysekara, 2010).

However, due to social changes, individuals are increasingly pursuing various occupations, leading to the emergence of a labor market characterized by daily and monthly wages, particularly with the growth

particular, such as one particular Buddha. Faith may not only be devotion to a person, but exists in relation to Buddhist concepts like the efficacy of karma and the possibility of enlightenment.

In Islam, these are known as “Iman,” which means “faith.” Iman can be outlined as six articles of faith. They are: Existence, Names, and Oneness of Allah. Belief in the Angels. Belief in the Day of Judgement.

In Christianity, faith, in one sense, is often discussed in terms of believing God's promises, trusting in his faithfulness, and relying on God's character and faithfulness to act. Some of the definitions of faith in the history of Christian theology have followed the biblical formulation in Hebrews 11:1: "the assurance of things hoped for, the conviction of things not seen".[1] As in other Abrahamic religions, the concept of faith includes a belief in the existence of God, in the reality of a transcendent domain that God administers as his kingdom and in the benevolence of the will of God or of God's plan for humankind (<https://en.wikipedia.org/wiki/Faith>)

of the service sector. Employment can be found in both the government and private sectors, and self-employment is also prevalent. Engagement in any occupation contributes to improved livelihoods, whether through daily or monthly wages. The success of these endeavors often depends on individual performance. In such contexts, the tendency to seek blessings from unseen powers can be identified through the information gathered in this study.

We came from Colombo, Piliyandala. I came today with my husband to pray for his business activities. We have received the blessings of the Pattini deity in every life event. We come here for everything. I have great faith in the Pattini Maniyan. Before starting anything, we always make an offering to the Pattini deity. Usually, we offer fruits. (Interview-04).

It is a common belief that the goddess Pattini supports women and activities associated with them. Moreover, the interview suggests that the goddess Pattini is also invoked for business success. Thus, the goddess is not exclusively linked to women-related activities; rather, the emphasis on business success is evident. In this instance, the wife participates actively, and her husband supports her involvement. This reflects how worship of deities can inspire both men and women to pursue business interests.

Traditionally, the husband is viewed as the householder, protector, and primary earner of the family. However, this dynamic has evolved in modern society. In the context of the interview, the wife's guidance in business matters is significant, with the husband's agreement to her participation. This indicates that the husband is willing to implement his

wife's ideas. This mutual bond and understanding between them may be a key factor contributing to their business success.

The worship of Goddess Pattini is not solely associated with rural villagers, as demonstrated by this discussion. Participants mentioned, "*We came from Colombo, Piliyandala.*" Generally, urban and semi-urban areas are connected to business activities. Piliyandala, a semi-urban area, is linked to the main city, Colombo. Such businesses foster connections between major cities and their surrounding areas. However, people in semi-urban locales also engage in beliefs surrounding gods, as highlighted in the discussions. This indicates that there is little difference in the reliance on divine intervention between urban and rural populations when faced with troubling situations.

The expansion of towns occurs as societies evolve. Education, profession, and property contribute to the competition found in urban areas. This competitive environment prompts individuals to seek success in business through assistance from unseen powers, as illustrated in Interview 04. Additionally, the desire for business success is evident in Interview 09:

First of all, I go to Sri Dalada Maligawa and then come to this Dewalaya. The reason is that Lord Buddha is regarded at the top level. I run a small-scale mushroom business. I have seen some development, but not lately. Due to COVID-19, I have been unable to sell them, so I came here to seek blessings for growth (Interview 09).

The pandemic has adversely affected the agricultural sector, leading individuals to turn to worshipping gods as an alternative path to success.

Frazer⁹ noted that religion is inherently supernatural. This interview exemplifies the belief that gods possess more power than individuals themselves. He discussed how people make offerings in hopes of resolving daily challenges. Similarly, divine offerings are common during new beginnings. This reflects a belief in the human capacity to influence outcomes through the intercession of invisible powers. Ultimately, success in these endeavors hinges on the faith that individuals cultivate, which is influenced by the societal understanding of divinity.

Child Expectation and Kiri Amma Dana

A special aspect of the Kiri Amma Dana involves selecting mothers who have given birth as participants. According to folklore, mothers symbolize prosperity. By providing alms to the Kiri Amma, individuals seek the blessing of childbirth. The offering of Kiri Amma Dana to Goddess Pattini serves as a symbol of success.

Our first child was a son, but he was born handicapped and passed away. We suffered greatly. I came here and promised to the goddess that I would make an offering if I had a healthy child. Now, the baby I am carrying is my second child. We offered the Kiri Amma Dana here, and I kept my promise. This child is healthy (Interview 7).

The expectation of a healthy child through Kiri Amma Dana is clearly illustrated in Interview 7. The mothers participating in this event are those who have given birth, signifying the unbreakable bond between

⁹ Sir James George Frazer, 1915, *The Golden Bough: The Study of Magic and Religion*, Vol. 12, London Press, London.

mother and child. In agrarian families, children are essential for labor and care for aging parents. Thus, a mother with children is regarded as blessed. Seven esteemed and blessed mothers participate in the Kiri Amma Dana (Amarasekara, 2002).

In the Pattini cult, Kiri Amma Dana holds special significance. Parker refers to Mahee Angana as Amma Devi and suggests she may be Umayangana, the wife of Shiva. Instances where Goddess Pattini is identified as Amma Devi coincide with the way Kiri Amma is sometimes referred to as "Amma Devi" (Dhramadasa, Thundeniya, 1994: 113).

We came here to offer the promise of reward that we made for our daughter. I promised her a male child as her first baby. The child was born without any complications. Today, after three months, we returned to fulfill our promise by offering Kiri Amma Dana. These fresh fruits are our offering. The 'Mal pela,' or small altar, is created on the bark of a mango tree when offering Kiri Amma Dana, as it is believed that Goddess Pattini was born from a mango (Interview 08).

Kiri Amma Dana, associated with the Pattini cult, involves the offering of fresh fruits with their mild aroma. The tradition of promising to reward Kiri Amma Dana in the hope of motherhood has been practiced since ancient times (Amarasekara, 2004).

Both of us are graduates working in the government sector, and we have a deep belief in Goddess Pattini. It has been a year since our marriage, and we came to fulfill our promise in hopes of expecting a child (Interview 08).

Regardless of their educational background, belief in Goddess Pattini is evident, as noted in Interview 8. The delay in having children until after

achieving higher education and securing a government job is apparent. While there may be scientific connections between age and pregnancy, there remains a strong tendency among individuals to worship Goddess Pattini with the hope of conceiving a child.

Protection of Children's Lives

Goddess Pattini is identified as a motherly figure, embodying affection and understanding of a mother's feelings and emotions. Many mothers vow to the goddess for the protection of their newborn children. In this context, the *Kiri Amma Dana* strengthens the bond between mother and child.

"It has been a year since we came here to vow for my child's protection. We made similar offerings for our previous child as well. This is a tradition we usually follow, and the whole family comes here" (Interview 01).

Interview 06 elaborates on the practice of healing children from infectious diseases through offerings to Goddess Pattini. It also mentions the intention to perform future offerings with the hope of continued protection for the child. This practice has been in place for a long time, and it is widely accepted in society that Goddess Pattini protects young children. Therefore, worship and offerings are commonly practiced, with all family members participating in the worship of the gods.

However, the busy lifestyles of individuals have led to increased isolation. Various social factors and changes have created intense competition within society. Thus, these rituals help restore relationships among family members. The involvement of family members in worship fosters a mutual bond among them.

Expectations of Success in Examinations

Education plays a vital role in every society, with skills and talents often assessed through examinations. In Sri Lanka, examinations like the Grade 5 Scholarship, Ordinary Level, and Advanced Level have become highly competitive. The Grade 5 Scholarship exam, in particular, is frequently viewed as an examination for parents, who strive to ensure their children pass in hopes of securing admission to prestigious national schools.

There is no difference between girls and boys; the exams are the same for both. So, on their behalf, I plead to the goddess, promising an offering in return. In Sri Lanka, there are thousands of pattini dewala, but this one is special. Many miracles happen here (Interview 03).

Although Goddess Pattini is primarily associated with women, she is not specifically linked to small children. Generally, small children lack a deep understanding of these matters, and many of their actions are instinctual. Parents bear the responsibility of guiding their children along the right path, making it crucial to provide a quality education. The mothers in every family are deeply connected to their children's well-being. Thus, pleading with the goddess for blessings on their children to succeed in examinations is a common practice.

There are many places of Pattini Dewala, but this place is special, and the goddess Pattini is miraculous. This is the place where the Buddha stays (Interview - 05).

Through interviews 3 and 5, it is revealed that the location of the Dewala is significant. There are thousands of Pattini Dewalas, but the Pattini Dewala at the Dalada Maligawa premises is considered miraculous due to its proximity to the Dalada Maligawa. This temple dedicated to the

goddess Pattini is centrally located in the city. Worshiping gods helps people fulfill their daily necessities, which is particularly important in today's busy society. Therefore, the location of the Dewalaya is emphasized.

The influence of Indian society is a considerable factor in the Sri Lankan belief in gods. The arrival of Prince Vijaya in Sri Lanka confirmed the belief in gods among the Sri Lankans. Historical evidence suggests that ancient Brahmin beliefs from India may have migrated to Sri Lanka with Prince Vijaya. When Prince Panduvasdev arrived in Sri Lanka, it is said he was disguised as a Paribraja. This religious disguise indicates that a Paribraja religion was prevalent in Sri Lanka (Weerakoon 2017).

In Buddhist teachings, gods are not neglected. Significantly, Sinhala Buddhists have been inspired to believe in gods. Buddhist sermons include details about gods, such as in the Chanda Paritta, Surya Paritta, Dajagga Paritta, Maha Samaya Sutta, and Atanatiya Sutta, which directly reference gods. The Dhammachakkapawattana Sutta even acknowledges the acceptance of belief in gods. During the Gampola Period, King Buwanekhabahu brought Soli Brahmins who initiated sacrificial practices. It is believed that these practices have persisted among Sri Lankans in today's society. Similarly, during the reign of Seethawaka Rajasinghe, priests from Andhra and Shiva wise men introduced different beliefs related to Yaksha sacrificial practices. These sacrificial traditions facilitated the spread of belief in gods among villagers with limited knowledge of Buddhism.

The belief in gods gained popularity in Sri Lanka with the arrival of North Indians. Temples (Dewalas) were constructed, and various offerings and practices were established. In Sri Lanka, terms like “Siv Maha Dewala” or “Siv Deviwaru” were not in use (Dharmadasa and Thundeniya, 1994: 22). It could be assumed that the Buddhists, living with the primary objective of their faith, have reduced social conflicts (Tambiah, 1992). When considering the encouragement of Sinhala Buddhists to believe in gods, one should also focus on social conflicts and complex societal structures. Additionally, social changes should be taken into account.

Religion is often inherited at birth, but various immigrant religions can also be found within a society. Therefore, it is significant to examine the factors that motivate individuals to adopt beliefs beyond their religion of birth. Social scientific studies reveal that a primary reason for this phenomenon is the perceived loss of core values within their original religions. As a result, this disconnection has led to feelings of depression and increased family and social conflicts among individuals. Consequently, the inability to find solutions to their problems has exacerbated their situation.

Conclusion

Many devotees from various provinces of Sri Lanka visit the Pattini Dewalaya located within the premises of Sri Dalada Maligawa to make offerings and worship. Their primary objective is to fulfill specific personal desires. The interviewees considered for this study do not come to the Dewala premises for entertainment or sightseeing. Worship of Goddess Pattini is particularly associated with hastening marriages,

especially for daughters, as delays in marriage often invoke significant social concerns. Factors such as caste, dowry, horoscopes, education levels, job status, and family background are all taken into account in the marriage process. Regardless of the reasons behind these delays, they have prompted increased worship of Goddess Pattini.

Another important reason for worshiping Goddess Pattini is related to child expectancy. Even highly educated individuals express interest in worshiping the goddess for this purpose. While scientific explanations exist for pregnancy, faith in the divine often grows stronger during such personal situations. The performance of *Kiri Amma Dana* has further fostered mutual bonds and understanding among devotees.

Additionally, worshiping Goddess Pattini to protect young children from infectious diseases is a common practice. Although scientific health guidelines exist for preventing such diseases, many consider worshiping the goddess to be a suitable alternative for safeguarding their children. Another motivation for worship is the desire for success in self-employment. Business owners in urban, highly competitive environments seek divine blessings to ensure the smooth operation of their businesses and agricultural endeavors. The COVID-19 pandemic has significantly impacted many businesses, leading owners to turn to Goddess Pattini in the hope of revitalizing their enterprises through solemn promises and offerings. Furthermore, worshiping the goddess is often tied to academic success, with parents promising offerings to divine entities as a reward for their children's examination achievements. This reflects parents'

aspirations for their children's future success and highlights how worship can inspire motivation and resilience in facing competitive examinations.

The delay in marriages among younger females in Sri Lanka has become an invisible social crisis, contributing to various issues such as suicide, depression, prostitution, and drug addiction. There may be genuine reasons behind these delays, and the lack of viable solutions has directed individuals toward seeking divine intervention. Worshiping Goddess Pattini has the potential to evoke a sense of hope and emotional uplift for those unmarried and desiring marriage. However, this focus can lead to economic challenges as individuals invest significant time, money, and effort into these religious practices. Moreover, delays in pregnancy and infertility can profoundly affect family dynamics. Although infertility can sometimes stem from male factors, societal perceptions often unfairly label women as 'infertile.' Such stigmatization can lead to divorce, contributing to rising divorce rates. The performance of *Kiri Amma Dana* in hopes of conceiving has also sparked a cultural revival. By protecting children from diseases, the Pattini cult fosters socialization and cultural transmission through religious customs.

The government should actively work to improve the human condition, particularly during pandemic situations. If such support is lacking, business owners may increasingly seek solutions through divine worship. The belief that examinations can be passed with the aid of deities has gained traction among the population, further entrenching the practice of worshiping gods. Consequently, this belief has revived devotion among the populace. Devotees visiting Kandy Sri Dalada Maligawa come with specific intentions, and it can be concluded that none approach the

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Dewala premises solely for entertainment or sightseeing; rather, they seek divine blessings.

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Mottainai: A Look into the Japanese “Garbage Culture”

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Abstract

It is most often maintained that poor waste management systems exist in some societies because they lack the technological know-how or financial capital to set up a good system. However, even with financial donations and technology transfer from Japan, one of the cleanest countries in the world, there is quite a lot for countries such as Sri Lanka to achieve in the area of waste management. This paper looks into the characteristics of the Japanese culture that have been instrumental in shaping the people's attitudes which the article considers the essential ingredient to make the waste management system work. The example of rural Kamikatsu shows how a village can be turned into a zero waste village with zero technology but 100 percent commitment by the villagers. It is inquired how reducing the generation of waste is led by the ideology of *mottainai*. It is also shown how minimalism, collective consciousness, concern for others, sense of ownership and other concepts such as the 5S, being the essence of Japanese culture, play a vital role in shaping people's attitudes to keep their country clean and safe. It is exemplified how various social institutions such as family, educational institutes and religion play a role in propagating these social values that guide people's attitudes and practices. It is therefore concluded that attitude's shaped by cultural values are more important than financial capital or technology/ knowledge

capital for a country to manage their waste successfully and stay clean.

Key words: Waste Management, Mottainai, Collective Consciousness, Attitudes

Introduction

Garbage has cost people's lives in Sri Lanka. On the 14th of April 2017, when masses of Sri Lankans were celebrating Sinhala and Tamil New Year, the garbage dump in Meethotamulla in the Colombo district slid on top of the community that lived right at the base of the dump which had piled high into a tall garbage hill. Thirty two lives were buried and lost, eight persons went missing and more than 1700 people were severely affected ("Meethotamulla Garbage Dump". n.d.). The Meethotamulla incident was the crux of Sri Lanka's garbage crisis. Every year in Sri Lanka, thousands of people lose their lives to the Dengue epidemic that raises its head with heavy monsoon rainfalls. Just one year before the Meethotamulla landslide, people in Weliweriya in the Gampaha district took to the streets protesting against a scandal that contaminated the ground water in their area. The protest took a deadly turn when the military was deployed to disperse the crowds and shots were fired at the civilians who were fighting for their right for clean water ("Fight For Clean Water Turns Deadly: Army Fires On Weliweriya Demonstrators", 2013).

Japan boasts of one of the best waste management systems in the world. It has achieved this state by becoming the third lowest waste producer in the world while recovering 93 percent of the waste generated in the

country (“Which countries are the most efficient at minimising waste?”: 2020). However, Japan’s success story in waste management has not always been a fairy tale. It was more of a horror story even in the decades following the Second World War.

The trash problem was aggravated with the economic development of Japan that followed rapid industrialization. Waterways were clogged and polluted with industrial waste, oil residue, chemicals and construction debris. Four Big Pollution Diseases¹⁰ spread through nearly five decades in Japan, killing thousands and affecting an even larger number for generations to come. This finally brought the garbage problem to the attention of the government in the 1960s. Thereafter, a number of legislations, rules and regulations were passed to manage waste in the country effectively. While collecting, dumping, incinerating, or recycling garbage was given major attention, the main objective of the government became to reduce generating garbage (Ministry of the Environment of Japan, 2013).

Led by their success story, Japan also started extending support to other countries to help them manage their waste since early 1990s. Sri Lanka also became a recipient of such support and continues to receive financial and technical assistance from Japan with regard to waste management through the Japan International Cooperation Agency (JICA).

¹⁰¹⁰ Itai-Itai disease, Minamata disease, Niigata Minamata disease, Yokkaichi Asthma are man-made diseases that were created by environmental pollution caused by large Japanese corporations. (Almeida & Stearns, 1998).

Even with steady support from one of the world's best waste management strategists, Sri Lanka is still lagging behind in all imaginable respects of garbage management. Strategies that have been proven successful in Japan do not seem to work in Sri Lanka. Cities and villages in Sri Lanka are still polluted, garbage related accidents continue to happen and waste disposal and collection mechanisms are very poor. This messy situation ironically happens in a country where rules, regulations and policies to manage solid waste seem to be well in place. But they remain only in black and white. Local governments such as Municipalities, Urban Councils and Pradeshiya Sabhas, national policies and the Police Department all govern the waste management system in Sri Lanka. In fact waste management is an obligatory function of the local authorities. The Central Environmental Authority (CEA) spearheads waste management policies, and implements waste management strategies in the country.

The most lamented complaint is that Sri Lanka lacks the technology, financial and other infrastructure facilities to run an effective waste management system. This may be true in many cases, but even where financial, technical and infrastructural needs have been met, roads continue to be littered and breeding grounds for infectious diseases such as dengue continue to thrive. This paper was thus an attempt to identify the main ingredient that has worked wonders in waste management in Japan, and understand why waste management strategies that work in Japan fail to work in Sri Lanka even when the necessary technical, financial and infrastructural facilities are provided.

Implementing rules and regulations alone will not solve the garbage problem. Introducing new technologies and know-how will definitely help, but will not be the key to managing garbage in a country. Harvesting on cultural values and building favorable attitudes that are essential to keep the environment clean and unpolluted are the cog wheels of a waste management system. In other words, the support of the general public armed with the right attitude¹¹ is essential to oil the cog wheels of this mechanism. This is what drives the waste management system in Japan as exemplified in this article. Introducing Japanese technology, knowledge and strategies will not work in Sri Lanka because Sri Lanka has not developed thesesupporting cultural values and attitudes that are indispensable for the system to work.

Significance of the inquiry

Sri Lanka receives aid both in the form of financial/ infrastructure assistance and technology from many countries for various missions. Japan extends support of both kinds to Sri Lanka for solid waste management projects but the outcomes are not the same as in Japan. The Japan International Cooperation Agency (JICA) has initiated projects to introduce low-cost technology for waste management, provide equipment, and train human resources in Sri Lanka. Yet, the country has progressed little in terms of solid waste management, and there remains a

¹¹ Attitudes are defined as prescriptive or evaluative judgments (Voas, 2014), and should be differentiated from beliefs or values as defined in psychology. From a Sociological perspective, attitudes are manifested in behavior and are not latent and are the products of beliefs and values embedded in a culture.

long way to go in terms of hygiene and cleanliness¹². Also, even if some progress can be seen in areas where the projects take place, there is still a general lapse in waste management in the country. It is therefore important to understand why strategies that work in Japan do not work in Sri Lanka in order to avoid making the same mistakes repeatedly. Most importantly, the study sheds light on the actual aspects that will have to be addressed or improved in order to achieve sustainable results in waste management.

Literature Review

One of the main theories of development is that approaches to development should be compatible with the culture. This theory is critical when development involves foreign aid. Wolfgang Sachs in his book ***Planet Dialectics*** argues that accepting foreign aid is like admitting a Trojan horse into the country. Sachs argues that along with financial aid, donor countries transfer their culture to the recipient country because technology and procedures are part and parcel of a culture. This transfer of culture may not be obvious or overt but hidden and covert. Hence the term Trojan horse. Such a transfer of culture from donor countries could wreak havoc in recipient countries because if the aid is to be effective, the recipient will have to embrace at least some parts of the accompanying donor culture because that is the ideal climate in which the seeds will sprout. The new elements of culture making their way into the

¹²Hygiene and cleanliness is very much subjective, contextual and comparative concepts. Therefore, when it was claimed that Sri Lanka has much to achieve in these areas, the benchmark was the Japanese standard especially because the guidance, technology and aid comes from Japan.

recipient culture may not be ideal for them, and could destroy or distort their own cultural element (Sachs, 1999).

The point borrowed from Sach’s argument above, is that if technology or know-how from a donor country is to be effective in a recipient country, they will have to be accompanied by the cultural elements (values, norms and attitudes) that they were conceived and nurtured in. Financial aid or know-how minus the cultural elements would be a one-way road to failure. However, if the donor culture is bundled in a package with the technology and thrust on the recipient, there is no good reason to believe that it will be embraced with open arms by the recipients. In fact much of the development projects that have failed have failed because whatever was introduced to the society was not compatible with the local culture.

Sach’s argument leads to the idea of social sustainability. Social sustainability includes not only the benefits that accrue to the society/ community (Menikpura, Gheewala, Bonnet & Chiemchaisri, 2012); involvement of the community in the planning, implementation and monitoring stages of the project and most importantly, the degree to which the intervention is accepted by the community, and how culturally compatible they are (Zurbrügg, Gfrerer, Ashadi, Brenner, & Küper, 2012). Accordingly, studies have shown that technology is not the main ingredient of the success of a waste management project (Zurbrügg et.al. 2012). Most waste management projects kick start when a donor agency steps in with a pre-conceived plan led by the assumption that recipients do not know the importance of waste management, or that they do not have the know-how or financial means to do so. These are unquestionably valid reasons. This is why International Agencies spend

billions of dollars to regulate waste management in developing countries (World Bank, 2019). However increasingly, these agencies have realized that it is important to ensure the integration of the local community as well in waste management projects that are introduced to them by external parties (Subhash, n.d.), and that mere dissemination of foreign knowledge and funds will not do the trick.

What existing literature fails to focus on is the existing values/ norms and attitudes, knowledge and practices of the local community about how to handle waste, which I would like to term as the “Garbage Culture”. Most waste management projects do start with feasibility studies. Yet they focus largely on collecting data on per capita waste production, types of waste produced, how much waste is collected by the local authorities, and how much is not. This is essential data of course, but inadequate. This type of data does not guarantee that the intervention will take foothold in the recipient culture, or if it would be accepted in the recipient culture at all.

This study therefore examines the values, norms and attitudes of the Japanese culture that has set the initial conditions or the backdrop suitable to maintain cleanliness as a nation and compares this with the same in Sri Lanka. This examination and comparison is done to shed light on why some costly waste management projects implemented in Sri Lanka may not produce the same (desired) results as in the donor country of Japan.

Problem Statement

Despite receiving financial aid and advanced technology from Japan for solid waste management, Sri Lanka continues to face challenges in managing solid waste. This suggests that technological and infrastructural support alone are insufficient. The failure of these interventions points to a deeper issue—the lack of cultural values and community attitudes that support sustainable waste management. Unlike Japan, where practices are reinforced by collective consciousness and ideologies like *mottainai*, Sri Lanka lacks the social foundation needed to make such systems work effectively. This study seeks to explore how cultural values and attitudes shape waste management practices and why neglecting them leads to failure in foreign-aided waste management initiatives.

Objectives

This study aims to explore the cultural foundations that underpin Japan’s highly effective waste management system, with particular attention to the concept of *mottainai* and the role of collective social values.

Specific objectives:

- i. To analyze the cultural values and attitudes in Japanese society that contribute to the effective implementation of waste management strategies by the local people.
- ii. To compare these cultural elements with those present in Sri Lankan society to understand the limitations of transferring technology and strategies without compatible cultural contexts.

- iii. To assess the role of community engagement, education, and institutional support in sustaining waste management practices in Japan.

Methodology, Data Collection and Analysis

This study followed a qualitative, comparative case study approach, utilizing both primary and secondary sources. Secondary data was collected from scholarly works, government reports, NGO publications, and previous studies. The case study of Kamikatsu was also based on secondary data.

Primary data was collected through interviews, observations and anecdotal accounts from waste collectors, small business owners, and community members in both Sri Lanka and Japan, which enabled the comparative analysis between Sri Lanka and Japan. Interviews and observations were conducted according to interview/ observation guidelines prepared by the researchers. A total of 25 stakeholders/ key informants were interviewed from Japan and Sri Lanka until data was saturated. Qualitative data was analyzed using the thematic method of analysis.

The study does not employ statistical or quantitative measures but relies on a deep, narrative-driven exploration of socio-cultural dynamics influencing environmental practices.

Data Analysis and Discussion

This section does a comparative analysis of the waste management systems in Sri Lanka and Japan with a discussion that pivots around the

concepts of collective consciousness/ community engagement and the concept of mottainai. The analysis begins with the focus on the role of the government in Japan, and how the sense of ownership of the people have contributed largely to make Japan a clean and hygienic country, unlike in Sri Lanka where local people’s attitude is to transfer sole responsibility of waste management to the government. This matter is exemplified with the case study of Kamikatsu.

What is waste management?

It would be appropriate to begin the analysis and discussion with definitions for waste and management. Waste/ trash or garbage consist of materials that are discarded because they are not used any further. Waste can be in several forms such as solid, liquid or gas. Solid waste can cause pollution, threatening life itself and therefore receives major attention at all levels of governance. Garbage is about power and garbage is about politics. In fact garbage can topple governments if not managed properly. Solid waste management includes the collection, treatment and disposal of unwanted solid material. A good waste management system is one that collects and disposes of waste in an area without causing any harm to the surrounding environment or the people in the community.

From rags to riches: the development of the waste management system in Japan

From the immediate aftermath of the Second World War, Japan was struggling with a garbage problem for several decades. Elderly Japanese people recall how littered roads and polluted streets used to be a normal

part of daily life. There was no proper mechanism for waste to be collected and disposed and pollution was seen as an inevitable by-product of industrialization, until Japan started paying a big price; with life. As mentioned in the previous section, the Four Big Diseases drove Japan to approach development in an environment-friendly manner. Today, it has evolved into one of the best waste management systems in the world, making Japan also one of the cleanest countries in the world.

There are some striking features observed in their current waste management system:

- 1) The government plays an important and efficient role in waste management. Its role includes formulating rules and implementing them, and executing waste collection programmes and disposing of them in an environmental friendly manner.
- 2) Waste management is not considered the sole responsibility of the government. The community participates actively in the system. It is in fact a unified system that integrates individuals at the household/ individual business level to the government or local authorities. From a functionalist point of view, all parts of this system work in perfect unison. Group consciousness ¹³is the driving force of the parts.
- 3) This unison is made possible because waste management has been blended in to their culture. Many other institutions such as family, education, economy and religion work together to

¹³ Group consciousness, also referred to as collective consciousness in this article, is the set of beliefs, values, norms and attitudes shared by a community as a group that results in the strength of togetherness or unity.

maintain the qualities required to keep the country clean and hygienic.

The following section inquiries into these three points in detail.

Role of the local government

The Japanese local governments, namely the City Governments have a very reliable system to collect and incinerate or recycle waste in a timely manner covering almost all households in all Prefectures with some exceptions. The local governments have distributed garbage calendars covering all weeks of the year, after careful analysis of what types of garbage is generated most, and how often they have to be collected to keep households stench-free.

The calendar is very much user friendly and attractive with colours that can make it very easy to understand even for someone like child who is not literate. The calendar resembles a small booklet, containing everything that the local people will have to know about disposing garbage, and not just the dates of disposal. Figure 1 shows that even the methods of disposal (Eg: open up the milk/ juice cartons, lay them flat and bundle them) are very clearly indicated with illustrations. The printing of this calendar is sponsored by the local business people, and it serves them as a form of advertising because the calendar will be on the refrigerator of every household.

Figure 1 The Garbage Calendar in the Saga prefecture



Source: <https://www.tsunasaga.jp/kitakawasoe/2014/01/post-9.html>

There is a rule that garbage will have to be segregated into a number of categories such as kitchen waste, paper and cardboard, pet bottles, plastics and polythene, glass, etc. and they will have to be disposed of in the designated coloured garbage bags that can be bought at any convenience store or supermarket in the area. For example, kitchen waste in the Saga Prefecture will have to be disposed of in pink coloured bags, and they will be collected only on Mondays and Thursdays according to the calendar on Figure 1. The bags are made with a long “tongue” between the handles (Figure 2) to tie up the bag to prevent spilling the content.

Mottainai: A Look into the Japanese “Garbage Culture”

Figure 2 Coloured garbage bags used in the Saga Prefecture



Source: https://www.saga-ed.jp/kenkyu/kenkyu_chousa/h20/05syakai/jissen2_new.htm

The bags will have to be left in the designated place assigned for the apartment complex or area in the village by 8am, ready to be taken away by the trucks (Figure 3 Left). Some garbage disposal points are like small enclosed shelters with lockable doors, but some are not. When garbage is collected in the open, the bags are covered with a sturdy net to prevent crows from strewing garbage all over the place (Figure 3 Right).

Figure 3 Garbage disposal points



Source: <http://www.chikuho-k.co.jp/publics/index/18/#&gid=1&pid=2&https://amanaimages.com/info/infoRF.aspx?SearchKey=10669006847>

The garbage collected by the local authorities is then compressed and transported to processing plants/ incineration plants that use advanced technology to recycle, make compost or bio gas.

Community participation in the waste management system

So the local governments are playing a very important and efficient role compared to countries like Sri Lanka where less than half of the waste generated daily is actually collected by the authorities (CEA, 2018). However, could the Japanese local authorities alone have made the system work so well? Certainly not, because what really keeps the cog wheels of the waste management system running in Japan is the contribution of the community. It is because of the same reason why the handful of municipality areas in Sri Lanka where the garbage is collected, are not exceptionally cleaner than others. If people do not have a sense of ownership about their village/ city/ country; if they do not think their garbage is their responsibility; if they do not have an unselfish attitude about how their actions might affect others; if group consciousness is absent, even where the authorities are playing their due role, the system may prove unsustainable and not very effective.

The story of Kamikatsu

The best case study which showcases this is the village of Kamikatsu in Japan. Kamikatsu is a sleepy village in the Tokushima Prefecture which earned the epithet of being the first Zero Waste Village in Japan. The local government was not very helpful in the collection or disposal/ incineration of the garbage in the village which only had a population of approximately 1500 people, most of whom were over 65 years old. The

government only raised concerns and enforced rules banning burning garbage in the open. After a failed incinerator project, the only option left was to transport their waste to the neighboring prefecture, which was ridiculously costly (Gray, 2019).

Led by a community member Akira Sakano, the village worked towards an alternative, which was cost effective and environmentally friendlier than any other system: reduce generating waste. This meant making massive life-style changes, self-discipline, cultivating sense of ownership about one’s village, and developing unselfish care for fellow villagers (group consciousness). Instead of buying a coffee can or coffee in a plastic/ paper cup, people were encouraged to carry their own flask which will first, save money at the individual level. In other words, carrying one’s own flask will only cost the customer the price of the beverage instead of having to pay for packaging which will ultimately be tossed in the trash can anyway (TEDx Talks, 2019). Second, carrying a re-usable flask will reduce generating garbage tremendously, because there will be no coffee can or paper cup to throw away.

Some of the steps taken seem quite extreme for folks in countries like Sri Lanka who are used to tossing things out of the bus window, and expect the government to clean it up. It was decided to segregate garbage into an overwhelming 45 categories in Kamikatsu. Thus instead of an umbrella category of “glass”, Kamikatsu villagers will have to separate their glass into green glass, brown glass, colourless glass, yellow glass etc. Kamikatsu did not even have garbage tractors visiting individual households every day to collect garbage. Villagers were expected to

bring their garbage to the Garbage Collection Center on their own. Only very old and immobile people received a visit by the tractor once in every two months. People were encouraged to reuse things as much as possible, and bring things they do not want (items such as clothes, shoes, toys, porcelain ware etc.) to the flea market where one may leave their unwanted things for someone who might want them.

Upcycling is a major strategy used in Kamikatsu to reduce generating waste. While recycling involves mass scale deconstruction of something to produce the same product (waste paper can be recycled to make paper again of compromised quality), upcycling does not require high technology or mass scale deconstruction. Upcycling only requires individual level creativity and innovation for example, to turn a pair of old socks into a soft toy¹⁴, old *koi nobori*¹⁵ streamers into raincoats or PET bottles into flower pots. Yet it requires individual level willingness and commitment. The latter section of this paper discusses how this willingness and commitment is cultivated by the Japanese culture through the *mottainai* concept.

¹⁴ In the aftermath of the Tohoku earthquake and Tsunami in 2011 which left thousands of Japanese people homeless, the displaced victims did not ask for donations or financial aid from fellow Japanese to rebuild their lives. All they asked for was old socks. Upon their request, crates of old and new socks from all over Japan were sent to groups of women waiting eagerly at community centers. These creative souls turned the socks into cute monkey soft toys which they named *Ono kun*. They sold *Ono kun* to raise funds instead of begging for donations. What they used to do this was old pairs of socks, because they believed in the intrinsic value that even an old rag can have. Today, *Ono kun* is a popular brand in Japan. And a pretty expensive one too due to the high demand.

¹⁵ Japanese Carp Streamers hoisted on Children's Day celebrated on the 5th of May.

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Figure 5 Chandelier made out of waste bottles (left) and restaurant building made of waste materials (right) in Kamikatsu



Source: <https://zenbird.media/zero-waste-in-japan/>

It was not easy to receive this level of commitment and sacrifice from the people at the beginning (Gray, 2019), especially from the very old people living on their own and could not drive. But Sakano was someone who could transform weaknesses into strengths and threats into opportunities. More than half of their population was over 65 years and nearly quarter of the population was over 85 years (TEDx Talks, 2019) and lonely thirsting for company. Having to bring garbage to the Waste Collection Center was turned into a blessing in disguise. The Waste Center now served more like a Community Center where people met, talked, laughed and shared food. Kamikatsu also had a very transparent system about what happened the waste people brought in. Accounts and inventories of what came in and went out of the Center were maintained and the community could see how their waste transformed into useful things. People felt that by contributing to the waste management system, they

were helping the village earn economic profit (Gray, 2019). This was an incentive enough for the cog wheels to keep rolling.

The story of Kamikatsu exemplifies several points that I wish to make: that reducing generating waste is more profitable environmentally, socially and economically than trying to manage waste produced in tons daily; waste management does not necessarily have to involve advanced technology; the essential ingredient for a successful waste management system is the community participating with the right attitude; the approach that suits Kamikatsu will not work in Tokyo let alone Sri Lanka. This is why simple transferring of waste management technology, donating incinerators or even introducing coloured bins that line the streets in almost every country in the world is not enough to achieve the desired effects. In fact throwing garbage into separate coloured bins is not something that is unknown to most countries even at the point of “introducing” them by an external donor country. It is not very difficult to understand the simple logic behind this practice either. Then why do people not put trash in the right bin? Because knowledge of technology is not the missing link. Community participation with the right attitude is.

Technology Vs. Community

In one of my studies I interviewed a private small business owner in Kiribathkumbura, Kandy, Sri Lanka who collected waste plastics and glass bottles. People could bring their waste plastics and glass bottles to his collection center and residents in the neighborhood found it very convenient. However he decided to close his business before long

because of the selfish attitude people had towards the service. “Customers” did not take segregation seriously. The owner talked about how various garbage other than plastic and glass including stinking adult diapers were hidden among the bottles in the sacks that were handed to his center. Garbage Collectors in the Kandy Municipal Council talked about how people mixed garbage callously, or hid polythene among paper or a glass bottle or two among PET bottles. It does not take very long for the most modern, technologically advanced machines donated to Sri Lanka by Japan itself to breakdown when something that should be there is dumped in. Consider the following example. PET bottles are different from plastic bottles. In Japan, they are collected separately because the machine that takes PET bottles cannot handle plastic bottles. In fact it cannot handle even a shred of plastic. Therefore when PET bottles are disposed, consumers are required to tear off the label around the bottle and also remove the cap of the PET bottle which is made of plastic and dispose of them separately in respective bins provided nearby. The catch is that people take the trouble to go through all this segregation because they feel an unselfish responsibility towards the society. Throwback to the story of Kamikatsu reminds us that people segregated their unwanted stuff into nearly 45 categories. This sense of responsibility, unselfish care and consideration for others culminate in a sense of ownership about their village. Garbage Collectors in Kandy, Sri Lanka showed me their palms crisscrossed with scars of cuts and bruises resulting from their “hazardous” occupation. Their job has been made hazardous because more often than not, people dispose of broken glass, used syringes, sharp objects and cans haphazardly.

On the contrary, Japanese people usually wash bottles, cans and even cardboard cartons before disposing of them out of consideration for the collectors, and also because they would not leave a stench while they sit in the house until they are taken away. Broken glasses and sharp objects are not disposed of, hidden among other types of waste, they are clearly marked with the skull and bones sign or wrapped up in many layers to prevent injury to the collectors. These attitudes are cultivated through socialization by the family, early childhood educational institutions and primary schools, where children are trained in the basic skills of life such as how to feed one's self, how to use the toilet in a manner that it will be left clean enough for the next person to use it, general cleaning, waste segregation and disposal.

The very simple act of tying up the garbage bag can prevent spilling and littering, saving a lot of time and trouble for the collectors. If only kitchen waste is collected on Mondays and they should be in pink bags, then Japanese people will not leave them out on Sunday in green bags. This is why the contribution of the people with the right attitude is the essential ingredient to make even the technology work. The next section will look into how this level of discipline is achieved.

Community-based organizing

The waste management system in Japan has the solid foundation of being managed by community-based organizations: namely the *jichikai* translated into English as Neighborhood Organization. Being managed by the people of the village, and not some outsiders is what makes the system sustainable. The *jichikai* is made of all the households

in a given neighborhood. The *jichikaicho* or the Community Leader is selected annually from among the members. The *jichikai*, apart from doing a host of other activities bears special responsibility towards keeping their area clean. The Garbage Collection Points (shown in Figure 3) are actually kept clean by the *jichikai* and not the local authority that collects waste. The *jichikaicho* makes a timetable including all member households to clean the garbage collection points. Every household will have to clean the place for a week. No one based on age, gender or occupation or social prestige is exempted from the responsibility. The *jichikaicho* will hand over the cleaning equipment such as a broom, a mop, a water hose, and the key to the garbage shed (if it is lockable) or garbage covering net along with a sign sheet to the first household on the roster. Members of that household will have to open the gates early in the morning and have it ready for neighbors to dispose of their garbage. If the place is not lockable, the garbage covering net will have to be left for people to place their trash bags underneath to stop crows from strewing the garbage. After the waste has been taken away by the authorities, the place will have to be washed, cleaned and mopped by the responsible household. At the end of the week, all equipment will have to be handed over to the next household on the list. This system works like clockwork. No one forgets, complains that s/he is too busy/ too old or too high above the others in social rank to clean the garbage place.

Every month in a Sunday morning, the *jichikai* also arranges a *kusasoji* programme translated roughly into weeding programme. It resembles a *shramadan* programme in which all households of the

jichikai participates by sending at least one family member to clean the neighborhood. This may include weeding, cleaning the drains and waterways, trimming bushes, and cleaning public spaces such as parks and roads. How do they ensure participation of the people?

Of course there is a fine for non-participation that will be doubled every time a household misses the *kusasoji*. Thus if the fine for missing the session once is 1000 Yen, the fine for missing it a second time in the same year would be 2000 Yen and 4000 Yen if missed again for the third time within the same year. One cannot deny the impact that the fine has on participation. However, social sanctions are the real punishment that people fear than the monetary fine. Social sanctions are collective punishments that the people of the community enforce on those who deviate from collective behavior especially geared towards the common good. Simply forcing the Japanese system on a different culture without the main ingredient that actually keeps the system running i.e. collective consciousness, will not produce the same results in the host country. The next section examines how the Japanese culture fosters this sense of collective consciousness. It will also look at how social sanctions work to maintain collective consciousness.

Culture as the cradle of collective consciousness

In an interview with a Japanese Social Worker, the importance of collective/ group consciousness was emphasized:

“Japan was able to rise from the ashes after our defeat in the Second World War because of our unity, group thinking and collective consciousness. We were able to

stand strong in a competitive and challenging political environment because of the same qualities. We were able to recover very fast after natural hazards and reduce the death toll significantly because of the social capital that we had built. I am worried that rising consumerism and individualization brought in by Westernization is threatening this group consciousness and has already fractured the social capital ¹⁶especially in the cities. The group consciousness we find left in rural Japan is not there in towns and cities. If we [Japanese] do not find a way to rebuild those qualities, I am sorry to say we will be in great danger” (Orie Kitamikado, Japanese Social Worker).

Collective consciousness has been the foundation of not only the rapid Japanese economic growth, but also every one of their success stories including the waste management system. It is something that is cultivated and nourished by their culture. It all starts with the strong sense of *ie*. Even though the word *ie* translates into “house”, the word carries more depth than a casual referral to a building (Hayashi, 1998). It is in fact more than a word. It is an attitude that people hold; a mutual sense of belonging and ownership, a strong sense of responsibility towards their “own” home, village, country or even workplace. It is a

¹⁶ Social capital is about the value of social networks, bonding similar people and bridging between diverse people, with norms of reciprocity (Drekker & Uslaner, 2021; Uslaner, 2021). Social Capital forms on the solid ground of collective consciousness. People do not always have to be similar in terms of religion, ethnicity, race etc. to form collective consciousness. Collective consciousness can be a shared feeling of belongingness, a sense of ownership and an urge to serve for the common good that can result in social capital: i.e. bonding similar people as well as bridging different people to achieve a common goal.

feeling of altruism that puts the group before the individual. This is why it does not take a lot of convincing for Japanese people to segregate garbage into a troublesome number of categories or hitchhike a couple of miles to bring their own garbage to a collection center at the foot of a hill. In this culture, if someone acts selfishly, puts one's own self before the "group", or does not live by the collective norms, others in the community impose sanctions on that person. In the past, sanctions were tough, and included social ostracism/ isolation (*murahajiki*) or in extreme cases, actual physical ostracism (*murahachibu*). In modern Japan, sanctions could be ignoring the person or not inviting the person to community gatherings which are milder form of social ostracism. Yet social ostracism is disadvantageous for individuals in many senses. As Kitamikado pointed out, what makes it possible for Japanese communities to withstand all the natural typhoons, earthquakes and the Tsunamis and swing back to normal life very fast after a shattering disaster is social capital. This is why people dread the very thought of being left out of the social network. To stay in the network one has to act as one with the community.

Cleanliness itself is a norm that is promoted through the Japanese culture. Many Japanese people believe in Shintoism, which is a polytheistic religion. Shintoism promotes that *shiawaseno kami sama* or the God of Prosperity/ Happiness lives in people's homes and the God would leave the place if there are dirty corners. This is why Japanese homes have built the toilet and bathroom at the very entrance of the house. Next would be the kitchen, making it not a surprising thing to walk past the toilet and across the kitchen to get to the living room. These are the two

cleanest places in a house and they are given such priority because that is where God of Happiness lives. In the Sri Lankan culture, the importance given to the toilet and the kitchen is comparatively much lesser. This is why toilets in rural homes are built some distance away from the house, considering it an intrinsically a dirty place, unworthy of being attached to the house. Kitchens too are usually built towards the back of the house in traditional homes. Contemporary architects add modern “pantries” to the house somewhere near the living room for a decorative purpose, but also add a black kitchen somewhere in the back to do the actual messy cooking.

Minimalism is embraced as a virtue in the Japanese culture. The concept refers to a way of life in which one possesses only the materials that s/he requires to live a free, happy and content life. Minimalism relinquishes hoarding, relieving one of jealousy, worry, fear regret and many other negative auras that hinder happiness. It is not something that can be quantified. It is rather a mental state that is relative and subjective. However, generally Japanese homes are “minimal” in many senses; especially the traditional ones. Furniture is minimal. They sit on cushions known as *zabuton* instead of sofas and arm armchairs. They sleep in quilts known as *futon* instead of beds. When not in use, the few things they use are removed and stored neatly inside cupboards. There is a place for everything in the house, cupboard or drawer. Japanese people believe that apart from other tasks, putting away things and cleaning (shining surfaces for example) has to be repeated regularly. Just like the floors have to be swept/ mopped every day and window glasses have to

be sprayed and cleaned regularly even when they are seemingly clean. Here we see the inception of the 5S concept.

Thus it is clear that 5S¹⁷ is not merely a system that has been imposed on Japanese company workers. It is part of their usual way of life: an element of their culture. This is why 5S may not work in other cultures to whom this is an alien concept. One cannot expect people from other cultures, say from Africa or Sri Lanka to practice diligently, five words that they do not even understand properly. It does not come as a surprise that the 5S in Sri Lankan offices stay messy and disorganized right behind a door that flaunts a poster explaining the 5S concept in detail.

Another that is closely intertwined with minimalism is the concept of *mottainai*. The word *mottainai* stands for the exclamation “what a waste!” Japanese people believe that it is such a waste (*mottainai!*) to discard things without exploiting the true value of them. Thus a stretch of cloth, a broken piece of pottery or an empty cookie tin have an intrinsic value to them that can be elicited by utilizing them for a different purpose even after it has been used up once. Upcycling waste, discussed in a previous section is embedded in this concept of *mottainai*. The essence of *mottainai* is brought out perfectly in the Japanese practice of *kintsugi* or joining with gold. Instead of tossing a broken ceramic bowl in the trash, the older Japanese people would mend the broken pieces with a glue mixed with gold dust. No attempt is made to hide the cracks.

¹⁷ At its inception, the 5S included Seiri (remove what is not needed), Seison (Organize what is there), Seiso (clean/ shine the area), Seiketsu (come up with standards) and Shitsuke (sustain/ be consistent in this process). Several more letters may have been added later down the years, but 5Ss were the foundation of the Japanese Management System. And it emerged from their culture.

Instead the imperfections are accentuated to emphasize the fact that something does not have to be perfect to manifest its value. The *kintsugi* objects are in fact more valuable because first, there is a sense of gratefulness associated with the service it had rendered before it got damaged; second the repairing is a painstaking art that requires patience and diligence, and this has to be valued; third it reflects the reality that cracks in life (challenges) give one more strength to stand even stronger than before, which is the very philosophy of Japanese resilience. It is clear why the repair is done in gold. How is *mottainai* connected to minimalism? *Mottainai* is an attitude that promotes using, reusing and upcycling things instead of throwing them away before their full potential or value is drawn. It leads to minimalism by discouraging hoarding or making unnecessary purchases for the sake of “owning” material possessions. As mentioned before, it can be argued that all these concepts of *mottainai*, minimalism etc. are nothing but attitudes. These attitudes, which are products of the culture, are like pillars that support the good practices (and vice versa). When waste management technology is transferred to another culture without these supporting pillars, it gives away before long.

Flea markets dot the map of even modern Japan. Attitudes nourished by ideologies such as *mottainai* and minimalism are behind the flea markets. Flea markets sell everything from clothes that have been discontinued using, shoes that are a size too big, handbags that one received as presents but were never used and toys that one’s children play with no more, to furniture and electronic appliances that people sell to upgrade. All items are sold at a very low and affordable price compared to what

their original prices may be. Items are cleaned and repaired (if needed) and sold in a shining condition, sometimes complete with a warranty of a few months. Shopping at flea markets in Japan is not a sign of poverty or an act to be ashamed of, but a sign of thrift, virtue and consideration for the environment. The flea market at Kamikatsu has taken the tradition a notch further. In Kamikatsu, people give away items to the flea market for free, and take things that they need for free. They weigh the items coming in and going out of the flea market and at the end of the year they calculate how many tons of materials were prevented from becoming “waste” due to the flea market concept. Then we face the next obvious question. Would people not grab things greedily because they are free? Certainly not, and that is the catch. This is where all the ideologies of *mottainai*, minimalism, unselfish consideration for others and collective consciousness are seen at work. Just because something is available and accessible for free, Japanese people would not want to possess it unless there is a real need for it. Sakano opines that they have created a culture where people think way ahead: they think of what to do with the item when they are done with it even before they buy it (TEDx Talks, 2017). Another strategy that has worked very well is making waste disposal very expensive. In Japan, it is expensive to dispose of large items such as furniture and electric appliances. These items cannot be left at the neighborhood garbage disposal spots indiscriminately. Depending on the item, a comparatively large amount will have to be paid to the local government and more often than not, the item will have to be brought to a collection center in the city by the owners themselves in a hired truck. Or if the item is small, the payment slip will have to be displayed on the item and placed at the neighborhood garbage collection space on a specific

day which comes perhaps only once a month. Due to this hassle, many hesitate to purchase things merely because something is in fashion.

School as an agent of socialization

Culture change is inevitable, and these attitudes are changing in contemporary Japan. This means the very foundation of this system is under threat as pointed out in a caption by Japanese Social Worker, Oriekitamikado. In other words, some of the practices are not followed with the same intensity and meaning by the Japanese younger generations because their values have been caught in the storm of Western consumerism. Individualism is rising, engulfing the collective consciousness on which so much relies. Upon realizing the imminent threat, measures are taken at not only the kindergarten and school levels but also university level to uphold the values and nurture the attitudes that maintain collective consciousness in the younger generations.

University students run flea markets for freshmen every year. There are clubs in Universities (known as Recycle Clubs) to which graduating students would donate their stuff such as stoves, washing machines, furniture, microwave ovens etc. These items are cleaned and repaired if necessary by students and sold at a very cheap price for fresh students renting apartments and moving into the area from other prefectures. Senior students running the club even transport the items to the new students' addresses on the little trucks they drive.

Japanese schools do not hire cleaners. It is also one of the few countries in the world that does not entertain the idea of domestic helpers or

servants. Thus both in school and at home, children as little as three or four are taught to clean up after themselves, be it their work space, dining table, play-area, toilet or classroom. Japanese kindergarten children are taught life skills in their formative years instead of mathematical tables and several alphabets. They are trained to use a toilet hygienically, wash their hands properly, and even sweep and mop floors until they shine. Primary school children are trained to serve meals properly, and clean up after the meals. They are taught how to wash, open up and stack milk cartons, tie them up in bundles and dispose of them in the right bin. These practices are done, repeated and reinforced at home because all institutions are harmoniously synchronized. It is unlikely that there will be households that practice hygiene in drastically different manners. This creates a uniformity that is passed down the generations.

Since Japanese homes do not hire domestic helpers, the norm is for everyone to do their own work including cleaning up. I have witnessed how many Japanese parents get their children to clean up after a meal even at restaurants without leaving a mess for the staff to clean. Kids are made to understand that the restaurant staff is paid to prepare and serve meals and not to clean up after customers. They teach their children the valuable lesson on dignity of labor, which they carry into their adulthood. Children returning food trays to the counter, bowing their heads and thanking the staff for a delicious meal is a common sight at restaurants in Japan.

Kindergarten and school children are taken out on regular picnics by the institutions in the Spring. These picnics give kids the opportunity to

enjoy a delicious lunch out in the open under a tree. At the end of the lunch break, teachers ask students to look for anything that they have left behind. Cleaning up takes about five minutes during which every morsel of food is picked up by children, stuffed into relevant coloured garbage bags they have brought along, and taken away back to the school. Interestingly, Japan is a country where there are very few public trash bins compared to countries in the West. This is to encourage to take one's garbage back home without disposing of it in public. And it has worked. However for this to work, it requires quite a lot of self-discipline fuelled by the right attitude. It has been noted that in dirty, littered cities, authorities are blamed by the public for not placing an adequate number of trash bins and not emptying them in a timely manner, while not placing bins at all is the strategy that is used in many Japanese public places. By blaming the authorities for not keeping trash bins, people are refusing to take responsibility for their actions and renouncing ownership. This is very much evident in Sri Lanka. I have observed people sweeping their homes and conveniently shoving the dirt into drains that line the streets. Drains then flood at the slightest rain. For the people sweeping their homes, the dirt is out of their responsibility and becomes the responsibility of the government the second it leaves their private doorstep.

Summary and Conclusion

This paper discussed how waste management in Japan is supported by their culture. It has been made sustainable by the values and attitudes cultivated in the people. The system survives on people's sense of ownership, a collective consciousness which thrives on unselfish are for

others in the society, the sense of minimalism, and the idea of *mottainai*. The local authorities are running an efficient waste collection and disposal system in a majority of areas, but even in places where there is no such mechanism, the local community has been able to come up with an effective mechanism to keep their villages clean and safe. This shows that the most essential ingredient for effective waste management is engaging the community with the right attitude. This is why giving financial aid or transferring technology to developing countries by Japan itself may not produce the desired effect. The Japanese culture is also undergoing changes mostly due to the Western influence. The effects of this influence have started showing up especially in the cities. However upon recognizing the imminent threat, steps are taken to socialize children from a very young age into traditional values and attitudes that lay the foundation for the system. Thus a successful waste management system is not essentially about funding or technology, but about people having the right attitude.

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