

# Food Waste at Household and Social Gatherings: Drivers and Possible Remedies

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## Abstract

Over the course of the food supply chain, approximately one-quarter of the food produced for human consumption is thrown away. According to the World Food Waste Survey, food waste created at the household level accounts for almost half of the total food waste. A growing number of people are becoming concerned about food security and environmental consequences, such as resource depletion and greenhouse gas emissions associated with food waste. This has heightened public awareness of the issue. Despite the fact that food waste happens at every level of the food supply chain, private households have been recognized as being the primary source of food waste production. However, there is currently a lack of studies about the factors that influence consumer food waste behavior. This paper presents a twofold study. In the first section, this paper maps drivers of food waste at household level along with the remedies backed by extensive literature review. In the second section, this study identifies factors which are responsible for food waste in social gathering with special reference to weddings along with solutions to prevent food waste in the context to social gathering through systematically reviewing empirical studies on food waste practices. The results of the study demonstrate that food waste is a complex and multi-faceted issue that cannot be reduced to a single variable; as a result, a more comprehensive integration of multiple academic viewpoints is required. The mapping of the factors of waste creation allows for a more in-depth knowledge of household habits, party organizers' practices, guest behaviors toward food, and the development of food waste control policies. Finally, we connect the factors that have been found with formulation of policy, business, and social responsibilities. This study will be a value addition in the existing pool of literature concerned with responsible consumption and sustainable practices.

**Keywords:** Food waste, Household, Social gathering, consumer behavior.

## Introduction

Every year, substantial volumes of food intended for human consumption are lost or thrown out at various points along the food supply chain. According to recent estimates, worldwide food losses and waste account for around 24% of all food supplied for human consumption (Kummu et al., 2012). Food loss has become a common phenomenon across the manufacturing, post-crop, and processing stages of food, whereas food waste refers to losses that occur during the distribution and consumption stages (Gustavsson et al., 2011; Kummu, et al., 2012). Distribution and consumption pattern at the household level are the largest contributors towards food waste in higher income nations (e.g. in Europe), whereas agricultural and post-harvest stages account for much of the food loss created in lower income

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**How to cite this article:** Srivastava, S.K.; Singh, S.; and Srivastava M.(2021). Food Waste at Household and Social Gatherings: Drivers and Possible Remedies. Purushartha, 14(2), 117-133

**Source of support:** Nil

**Conflict of interest:** None

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countries (e.g. in Sub-Saharan Africa) (Kummu, et al., 2012; Parfitt et al., 2010).

These negative consequences of food waste require a greater focus on ways to limit the quantity of food waste produced. Food waste prevention has been identified as one of the most promising methods for reducing environmental impact (Matsuda et al., 2012), because the environmental effect builds throughout the stages of the food life cycle (Williams & Wikström, 2011). Furthermore, food

waste prevention is attainable, as there appears to be a lot of challenges for food waste and loss reduction (up to 63 percent), particularly during the consumption stage (Kummu, et al., 2012).

The studies conducted by Balderjahn (1988), Schwepker and Cornwell (1991), and Sparks and Shepherd (1992) discussed the conflict between controlling and committing a particular action. It is noted that the situational attitude may be altered in case of heavy wastage which is ongoing in the food sector. Breckler, and Wiggins (1989) argued that the desire for the actions and gaining confidence in their abilities for carrying out the actions are more important for consideration with respect to environmental behavior.

The process of food wastage is a continuous one which estimates the progress concerning the existing preferences based upon the previous consumption patterns and more significantly occurring changes only under exceptional situations (Evans, 2012; Watson & Meah, 2012). The stated change is related with environmental concerns (Brook Lyndhurst & WRAP, 2010). In the nations that are widely developed, the political matters which are concerned with the impact on the environment have a say towards generating awareness on healthy eating and lifestyle. The above discussion is based on consumers' concern towards the food fraternity and growing wastage in recent times (Dobson & Gerstner, 2010). The impact on the environment with special reference to food consumption had a direct or indirect influence on the choices and eating pattern of the consumers (FAO, 2013).

The objective of the present study is to identify the drivers of food waste at household level as well as at social gathering level with a focus on providing the remedial action to prevent the food waste. It presents a blend of consumer- relevant literature of food waste into household and social gathering, with the aim of finding potential remedial action for

prevention of food waste. Even though, some studies on household food waste have been summarized in recent reviews and reports (E.g. Aschemann-Witzel et al., 2015; Parfitt et al., 2010; Thyberg & Tonjes 2016), there is no extensive literature on household food waste drivers along with food waste drivers on social gathering that is structured in such a way that connects drivers with possible remedial action. Therefore, in order to collect information and creating knowledge to find out the solutions it is important here to note that these four elements must be observed in this connection.

RQ1: What are the drivers of household food waste?

RQ2: How to prevent food waste at household level?

RQ3: What are the causes of food waste in social gathering?

RQ4: What are remedial actions to prevent food waste in social event and suggestions for further research?

The current study begins with explanation of methods used in the relevant studies of food waste. The next section of the study primarily defines food, food loss, food waste and further look towards drivers of food waste at household level along with remedial action concerning attitude and awareness, shopping pattern, packaging, socio-demographic factors and food storage practices. In further sections, this paper also reports food waste drivers in social gathering specially mentioned with reference to marriage. There are significant drivers like varieties, serving environment, behavioral factors, Size of serving utensils, availability of more snacks, fear of shortage of food along with remedial actions to prevent food waste in social gatherings. Finally, food waste drivers and their relationship to suggested interventions are

discussed, and suggestions for further research and design interventions are made.

## Methodology

In this article, the researcher reviewed papers from 1991 to 2020 based on promptly growing body of academic literature on household food waste as well as food waste in social gathering. In this manner, researcher goes beyond an exclusive focus on individual household consumer and places consumer food waste in the context of social event (Wahlen and Winkel, 2016). For practitioners, systematic reviews can aid in the resolution of managerial issues by assembling findings from a variety of studies into a trustworthy knowledge base. For academicians, systematic reviews can improve methodological rigor while also highlighting areas where more research is needed (Briner and Denyer, 2012).

This paper has a two-fold structure where first part reviews relevant studies related to drivers of food waste in households and remedial action to prevent food waste. The other part locates relevant studies to find evidence on why food waste occurs in social gatherings or events. The researcher considered only peer-reviewed journal papers published in English language, excluding grey literature such as research reports and novels. Only peer-reviewed material should be cited in a high-quality scientific journal. Furthermore, 'grey' literature that meets scientific standards is frequently published as a condensed version in the scientific literature (e.g. Quested et al., 2013).

The literature search was conducted using the databases Web of Science, Scopus, and Google Scholar. Several keywords were used to search the relevant literature like “food waste”, “household food waste”, “cause of food waste”, “food waste in social gathering” “wedding's food wastage” and “how to prevent food waste”. Following that, the articles found during the initial search were

manually reviewed (mainly by reading through the abstract). The researcher excluded studies that (i) did not have food waste at harvesting stage; (ii) did not have food loss in supply chain process (iii) did not have households and consumers as units of analysis even not focus on quantification of food waste. This pool of literature was further developed through the snowball technique i.e. by checking the references of the articles yielded by the initial search. The comprehensive search yielded a list of 68 publications for which the systematic review was conducted.

## Food

“Starting from the trivial, in order to survive, man, like other life forms must feed himself with natural organic substances called food. To be more precise, the term food should be replaced by edible because the most fundamental distinction made by man, the original Homo culinarians, divides the world into edible and inedible, into that which may be incorporated and that which may not.” (Falk, 1994) Falk's explanation is one of the most succinct ones. Food can be clearly edible or inedible, according to his definition, but much more significantly, people's perceptions of food's ability to be edible or inedible. Humans' biological diet is concerned in the first instance, while their cultural diet is concerned in the second (Falk, 1994). To explain the first example, humans can eat wood or certain plant forms, but they are unable to ingest these inhaled organic substances due to biological limitations. As a result, these organic compounds can't be classified as food for humans. Chicken, meat or other several bird and animal meat for example, which are all suitable for a human's biological diet, may be considered permissible food by some but unacceptable by others due to religious or cultural prohibitions. As a consequence, even though such organic compounds do not cause digestive problems, some people avoid them. Furthermore, sensation (gustatory and representative) as well as cultural classificatory terms affect human food tastes (legality and

justification). The line between sensation and cultural terminology about food tastes, Falk claims it can be ambiguous, and that these terms affect one another. (Falk, 1994).

*FAO definition 2014 (FAO, 2014):*

**Food loss:** “A decrease in mass (dry matter) or nutritional value (quality) of food that was originally intended for human consumption.”

**Food waste:** “Food appropriate for human consumption being discarded, whether or not after it is kept beyond its expiry date or left to spoil.”

**Food wastage:** “Any food lost by deterioration or waste. Thus, the term wastage encompasses both food loss and food waste.”

According to FAO interpretation “Food loss and food waste refer to the decrease of food in subsequent stages of the food supply chain intended for human consumption. Food is lost or wasted throughout the supply chain, from initial production down to final household consumption.” Two of these problems seem to be identical, but their definitions and solutions vary significantly. Food waste or failure can be caused by a variety of factors and can occur at any point in the food supply chain.

When food is spilled or spoils before it meets the finished product or retail stage, it is called food loss. (FAO, 2016). Food loss is usually unintentional and occurs as a result of inefficiencies in supply chains (FSC), which occur during the output, post-harvest, and processing phases. Weak infrastructure and logistics, and a lack of technology, expertise, experience, and management capability are all contributing factors. “Normally the decrease of food may be accidental or intentional, but ultimately leads to less food available for all” (FAO, 2016).

According to Östergren et al. (2014), food waste is any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)”.

Food waste is equivalent to food scraps in the eyes of the California Department of Recycling and Recovery Resources (Call Recycle). As a result, they define food waste as “any wasted food, including surplus food, leftovers, or unsold food (for example, due to the poor quality of some vegetables, or leftovers such as onion skins or carrot tips), as well as any leftovers in plates.” Beginning in the mid-1990s, the United States Department of Agriculture (USDA) defined three types of food supply chain losses:

- Wastage from Agriculture land to Market (wastage from primary to secondary);
- Wastage at Shop (Retail or Wholesale) Wastage at product level);
- Food wastage by consumer either home or outside of home (wastage at market level).

Importantly, edible food that is discarded because it was not ingested by the final user (unavoidable waste from consumed food) as well as inedible scraps are included in this last step (inevitable waste from eaten food).

With Reference to last Stage, Food waste is known as a distinct type of food loss because the people who cause it and the remedies are not the same as those who cause food loss (FAO, 2014) and “refers to food that is of good quality and fit for human consumption but that does not get consumed because it is intentionally discarded – either before or after it spoils. Food waste typically, but not exclusively, occurs at the retail and consumption

stages in the food value chain and is a result of negligence, or is a conscious decision to throw food away” (Lipinski et al., 2013) Furthermore, there are four types of food wastage:

1. Original food, which contains food in unopened containers that was thrown away because it had reached its expiration date, such as cheese, yoghurts (and other dairy products), and rotting fruits and vegetables that were never used.
2. Food that has been partially consumed, i.e. food that has been opened or started but never done.
3. Leftovers, which are food that has been left on plates or that has been prepared in large quantities but has not been consumed.
4. Preparation residues (vegetable peels, eggshells) – this category, in contrast to the first three, contains fractions that cannot be avoided, particularly when fresh food is used to cook (Schneider, 2005).

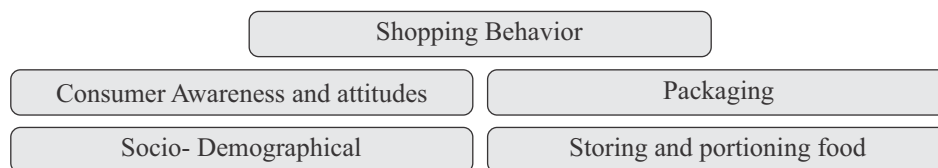
### Household Food Waste Drivers

Food waste happens in many diverse but linked aspects of daily living, including purchasing, storage, cooking, and consuming. Because they are so involved in their daily activities, consumers are unaware of all of the factors that contribute to the food waste they produce (e.g. Quested et al., 2011).

According to Evans (2011ab, 2012a, 2014), food waste sociocultural studies explain how the practices of food waste in households are socially organized around everyday activities. These studies also explain how the broader context of society influences whether food is considered edible or not, as well as how these practices should be studied in context (Evans, 2011ab, 2012, 2014). (Quested et al., 2011; Waitt and Phillips, 2015) studies explored that due to their effect on daily routines and the availability of storage space, modes of transportation and living conditions all have a substantial impact on food waste. Decisions and actions performed long before food is wasted, such as what to buy and how much to buy, how food is handled before the consumer takes it home, how food is kept after the household and how meals are arranged, may be the cause of the issue.

The literature reveals that food is wasted in families because of the way food is valued and because the principles people try to live by are not always compatible. In addition to our beliefs, our lifestyle and the ease we seek in our everyday lives have an influence on our awareness and attitudes. Lifestyle has a major role in determining how food waste-related habits including purchasing, handling, and risk management are implemented in the home. Material and structural considerations, such as storage, packaging, and the refrigerator, can impact and constrain human relationships with food. Food waste can only be reduced if cultural and societal norms and values are re-evaluated together with environmental considerations in the actual world.

(Figure 1: Drivers of food waste at Household level)



#### *Shopping Behavior*

There are four reasons for food waste may exist in

the household (Porpino et al, 2015). In the first place, if you buy too much food, or if you overstock your pantry, when it comes to food preparation,



there are concerns with over-preparation and aesthetics. As a last point, when food is eaten, such as leftovers, lastly, there are issues with food storage and preparation. Moreover, knowing the factor is essential to solving the issue of food waste behaviour. This research focuses on one of the antecedents, shopping behaviour. Food waste has been linked to buying habits in the past, according to previous studies. Customers are encouraged to purchase a lot of food because they are exposed to marketing methods that encourage them to buy impulsively, according to (Baumeister, 2002). As a consequence of professionally prepared food, people will be motivated to store food or purchase in bulk.

Customer motivation to monitor their food purchases may be attributed to several different factors (Krishjanti and Quita, 2020). Consumers' desire to decrease food waste is often motivated by a desire to save money. There's a reason for this particularly establishing an example for others is more important. As a consequence, it's safe to say that minimizing food waste is motivated by both social and economic considerations. Women are more motivated than men in relation to avoidance of eating certain foods, according to research conducted on consumers. Due to the fact that women are generally responsible for managing family finances, this may be the case.

#### *Consumer Awareness and attitudes*

The majority of consumers are unaware of how much food they are wasting, and moreover food waste as an unavoidable and hence, normal part of life (Brook Lyndhurst, 2007). However, researches disagree regarding the impact of boosting consumer awareness of food waste. According to certain research, raising awareness is necessary to improve food waste behaviors (Quested et al., 2011), as it will develop a sense of responsibility and regret, which will impact practices in a way that minimizes food waste (Grandhi and Singh,

2016; Parizeau et al., 2015; Quested et al., 2013b). Other research has found that raising awareness does not reduce food waste enough since it is created by complicated mechanisms in motion in order to feed the family, and raising knowledge does not modify these processes in practice (Watson and Meah, 2013). People employ mental shortcuts to go through the day more quickly, and food practices are part of regular routines. Furthermore, according to (Cappellini and Parsons, 2012), attitudes and a lack of knowledge and skills are not the primary causes of food waste, and that blaming customers is ineffective. (Evans, 2012) advises that efforts must be directed towards the material context of food practices, such as container sizes, in order to improve the adaptability of food items to everyday issues (Evans, 2012).

#### *Packaging*

Packaging protects preserves, informs, and entices customers to buy food. From farm to dinner table, it is essential to the whole food supply chain. 20-25 percent of household food waste is attributed to packaging issues according to a Swedish study; (Williams, 2011). Packing waste was shown to be caused mostly by large package sizes, issues in emptying packaging completely, and date labeling. It is estimated that 20% of food waste in the UK is thrown away because it is over its expiration date, and this factor accounts for 30% of all food waste disposal decisions.

Consumers frequently rely on rules of thumb rather than double-checking each product's storage instructions. They are also skeptical of information that contradicts their personal experiences. For example, if the freezing instructions on the package match to the perceived pace of degradation of the product (e.g., freeze on the day of purchase or freeze before the use by date), they are more likely to follow them (WRAP, 2011). Nonetheless, storage advice is widely used; however, it is unclear if this is related to product quality or safety.

### *Socio-Demographical*

Food waste was only linked to the number of people living in a home by a strong socio-demographic correlation. There was an obvious correlation between the number of persons in a home and the amount of food that was thrown out. People who live alone waste more food per person than those who share a home, with women contributing the greatest preventable food waste per individual.

Several further studies have examined the impact of different factors on the amount of food waste generated (Wassermann and Schneider, 2005; Pekcan et al., 2006; Schneider). (Obersteiner, 2007; WRAP, 2008; Baker et al., 2009) describes several socio-demographic factors that were shown to have a correlation with the amount of food waste, but they were not proved to have a clear and consistent connection. According to various studies, factors such as household size, the age of the oldest person, the location of residence, and the kind of work and education level were shown to influence the quantity of food wasted.

### *Storing and portioning food*

Food storage in the home is an important part of food handling. Many items are required, the majority of which may be found in the kitchen. Food is kept in refrigerators and freezers, as well as cabinets, containers, packaging, and drawers. The way food is stored affects its shelf life and, as a result, how much is consumed or wasted.

### **Remedial Actions to Prevent Food Waste**

This part focuses on the identified food waste drivers and their connection to the proposed corrective action to avoid food waste. We know a lot about what causes food waste because of the research we've done in many different fields. There is a link between these factors and shopping habits as well as social demographics. Some of these causes of food waste have been addressed via the development of goods on the market and the establishment of public awareness initiatives. Here is a breakdown of the factors that contribute to food waste and the steps taken to mitigate it.

**Table 1: Drivers and Remedial Actions to prevent food waste at Household level**

<b>Possible actions taken by the Consumer</b>	
Shopping Behavior	<ul style="list-style-type: none"> <li>• <i>Buying Less Food</i> Consumers must be more careful about their food intake in order to reduce food waste. Rather than buying more food, shoppers should shop more carefully. (Worldwatch Institute, 2011).</li> <li>• <i>Shopping without children</i> For preventing the food waste, there is one of the option to purchase less food is trying to go for purchasing without children. (Papaj,2016)</li> <li>• <i>Shopping on an empty stomach can be avoided</i> (Papaj,2016)</li> </ul>

Consumer Attitude & Behavior	<ul style="list-style-type: none"> <li>• <i>Consumer Ethical Behavior</i> Consumer Ethical Behavior According to Fair-trade International 2013 report, consumer's ethical behavior that incorporates the aspects of ecological and humanly welfare situation is drastically increasing.</li> <li>• <i>Consumer Attitude</i> The various attitudes towards ethics of not wasting food has its variations such as attitude, packaging, quantity of food to meet its various demands etc. are examples of direct aspects (Cohen et al., 2014; Graham-Rowe et al., 2014; Quedstedt et al., 2011, 2013).</li> <li>• <i>Shared information and knowledge</i> Providing knowledge for enhancing attitude, leading to many methods for conserving food so that it is consumable for a longer period of time, or ways to utilize it best before the expiry time have different aspects to it. (Sonesson et al., 2005).</li> <li>• <i>Self-Monitoring</i> Self-aim monitoring's is to show customers the implications of their actions. It may indicate how much food is lost every day or week, as well as what foods are thrown away most often and why. (Papaj,2016)</li> <li>• <i>Household Management</i> Planned purchasing and consumption in households can create an effective impact over the amount of food wastage at household level. (Srivastava et al., 2019)</li> </ul>
Possible actions taken by the Authoritie	
Consumer Awareness	While changing people's eating habits and disposing of food is difficult, awareness campaigns may help change consumer behavior at the household level (Lipinski et al., 2013).
Food Waste Education	Indian Government is thinking of adding a chapter in school curriculum on curbing the food wastage based on the 2021 data of U N Environment Program that 50 Kg of food is
Smaller package Size	Food waste and packaging are also affected by the shift toward smaller households. The current movement toward fewer households encourages consumers to buy cheaper and larger quantities of goods, which could lead to increased food waste if consumers purchase more than they want (Plumb & Downing, 2013).
Developing a robust system of storage and distribution	In order to address the issue of food waste, (Kumar, 2015) suggested that cold storage facilities be built as well as railway, road, and highway connectivity be improved in order to make fruits and vegetables accessible for consumption in remote Indian locations.
Sustainable Corporate Practices	It's about time for corporate social responsibility to discuss the effect of profit-driven industry activities on national trends such as overconsumption, waste, and unhealthy materialism. (Srivastava et al., 2019)
Emphasizing women's role in combatting food waste	FAO said in its 2010-11 edition of The State of Food and Agriculture report that "if women in rural areas had the same access to land, technology, financial services, education and markets as men, agricultural production could be increased and the number of hungry people reduced by 100-150 million".
Thinking circular instead of linear	One of the most difficult aspects of redesigning the whole food system to support a circular economy is that packaging methods are planned and applied in the food industry, but waste is handled by the waste sector. (Halloran et al., 2014)
Proactive policy related measures	A large-scale structural transformation that necessitates changes in cultural views and behavior will not succeed until it is accompanied by successful government policy policies and programmes. (Srivastava et al., 2019)



## Food Wastage at Social Gathering

Food is one of the main attractions of any party or celebration. People are drawn to food because they may sample a broad range of delicious foods that they would not find at home. This causes people to accumulate more food on their plates than they can consume, resulting in a lot of food waste. This article aims to provide some advice on how to prevent wasting food at gatherings.

Whether it's a wedding, housewarming, birthday, or reception party, there will always be lunch/dinner or snacks served, and a significant number of people will be invited. However, the quantity of food waste that occurs at such gatherings is frightening. There is a lot of waste food thrown away if you look at the dish tub where the dishes are dropped after dining and the dustbins where the wet food items are tossed. When the

weddings are done, you may notice a lot of leftover food within the waste dumps outside the wedding halls.

Reiterating a well-known truth, food waste is common and evident at most social occasions, particularly weddings. However, such squandering is not limited to weddings; comparable squandering occurs in restaurants, corporate functions, and even seminars and conferences. Anyone who enjoys social events is well aware of the amount of food that is thrown out during parties. According to (Misra et al., 2011), the occasion is the largest amount of food wasted. It happened 98 percent of the time during weddings, while it happened the least (59.8%) during conferences and seminars, according to the respondents. This is due to the fact that most seminars/conferences are by invitation only, with just a preliminary estimate accessible.

(Figure 2: Response regarding Amount of food waste in Different events)

Occasion	Very High	High	Average	Less	Very Less
Marriages	98.0	1.5	0.2	0.2	0.0
Anniversari/birthday/parties	1.2	22.5	36.7	6.8	32.8
Business Parties	0.0	8.5	19.3	60.7	11.5
Political Events	1.9	61.8	19.1	11.8	5.3
Conference Seminars	0.8	5.9	15.2	18.4	59.8

Source held Survey Centre for Consumer Studies !IPA

### Food Waste in Weddings

A significant number of weddings in India take place during specific periods in the year determined to be auspicious by religious authorities. Wedding ceremonies in India serve a great many numbers of purposes besides binding people into a holy union. Widely considered as a vital tool for forging social connections, matrimonial ceremonies also enable assertion of one's social standing by flaunting the affluence and abundance.

(Veblen, 2001) viewed conspicuous consumption in the view of social status and consumerism. He

proposed that people, with their irrationality and economic agency, hold social reputation and the prestige associated with a particular position in the society as matters of concerns and they place very little importance on their happiness while doing so. Later, (Bagwell and Bernheim, 1996) studied the conditions under which the Veblen Effects originate from the desire to show one's financial affluence. They examined a model under which a consumer's status in the society is contingent upon the perception his social contacts share about his economic prosperity. (Bloch et al., 2003), while examining the factors determining wedding expenditure in rural India, argued that wedding

celebrations are closely related to stature and reputation in the society. They further posited that such celebrations are to be seen as another shape of conspicuous consumption meant to communicate the family's social standing in the community. In a project report assessing the food wastage and pretentious behavior in social get-togethers, (Misra et al., 2011) pointed that India is characterized with passionate celebrations of seasonal festivals, religious holidays and life events such as births, marriages and deaths. They noted that marriage ceremonies in India are used to assert one's affluence and social status and a significant part of the expenditure is allocated to food.

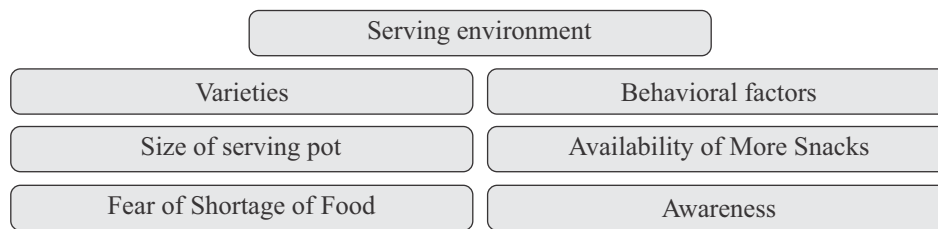
### Food Waste Drivers at Social Gathering

The term "appropriate" refers to food that is both healthful and nutritious. However, purchasing nutritious food does not always imply that it will be consumed (Evans, 2011a), but rather that it will result in an oversupply of perishable items that will be thrown away. Evidence demonstrates that the good provider personal extends beyond one's own home to include visitors. You must bring a lot of food to social events in order to be a good host,

since offering too little or the incorrect cuisine might be humiliating (Graham-Rowe et al., 2014). According to a study of low-income Brazilian families, the presence of appropriate food in the house is perceived as a sign of hospitality and luxury (Porpino et al., 2015).

There has been a clear correlation between food waste at the consumer level and a country's economic health. Food waste in poor countries is lower than in rich countries, but with the rise in income this rate is increasing, and India is not an exception (Biswas, Kastner, & Tortajada, 2015). Guests at weddings, restaurants, canteens and mess halls as well as hotels and houses are all major sources of food waste. According to Professor PK Mandanna of agricultural marketing at the University of Agricultural Science (UAS), Bangalore, food waste is greater at buffet venues than at locations where meals are served by professional stewards (Vyas, 2012). Consequently, the research's communication approach is to reduce food waste in areas that serve meals as buffets, such as hostel mess halls, luxury hotel restaurants, corporate cafeterias, weddings, etc.

**Figure 3: Drivers of food waste in Social gathering**



#### *Varieties*

More than 300 dishes are served at some of the most lavish weddings (Misra et al., 2011). Trying to sample all of these delicacies would be almost impossible for any one person. Consumers eat too many things without recognizing or tasting them, resulting in an increase in their consumption as well as a large amount of leftover food on their plates (Levitsky et al., 2012).

#### *Serving Environment*

According to Wansink and Hoch (1998), hoarding leads to increased consumption of high-convenience items. When food is cheerfully available, people prefer to put more on their plates. The portion sizes of meals shared with others were much bigger than meals consumed alone (Patel and Schlundt, 2001). Buffet systems give guests with greater room to eat more food than the conventional

method, which relies on the host's family to serve the meal (Misra, 2011).

### *Behavioral Factors*

Schachter and Gross (1968) stated that most of hunger's physiological causes may be traced back to social and psychological factors. As a result, the individual's conduct is the most crucial factor in determining his or her consumption pattern. The amount of food that is thrown out is a function of the culture and the society in which it is produced. Younger adults and children are more likely to throw away food than their elders, according to research (Misra et al., 2011). As a result of having to face the whole expense of waste, individuals become less sensitive to it. People who aren't particularly concerned about their weight or health tend to overindulge during wedding receptions since the food is so rich and delicious. Peer pressure and the fear of missing out on the thing the next time drives people to take more of that item, resulting in greater waste.

### *Size of Serving Spoon, Plates and Bowl*

More food is served on bigger tableware than on smaller dinnerware by the average customer (Wansink et al., 2006; Libotte et al., 2014). Dishes like plates, spoons, bowls, and more are made to hold a certain volume, but whether they are filled to that level or not is up to the user. The level capacity of a fixed-size serving plate may be affected by variables such as big serving spoons or piled takings, huge size of serving bowls.

### *Availability of More Snacks*

There is an average of 300 grams of food prepared for each person, which covers everything. However, people are more health concerned now, and a large number of them are also troubled with numerous diseases. Consequently, they eat less. Snacks are more popular than the main meal. As a result, the amount of food consumed from the main

course has decreased. However, this does not imply that they are eating less (Misra et al., 2011).

### *Fear of Shortage of Food*

Usually, the host of the party is threatened to lose social prestige due to shortage of food in party. Therefore, he prepares more food against the number of guests. (Singh and Sharda, 2020). Generally speaking, people tend to consume more than they should. All people, wealthy and poor alike, are included. If there are 500 guests expected, the food prepared is plenty for 700, even if there are only approximately 300 in attendance. Sometimes one guest invited in more than one party or wedding, and they attend all events, but they could not consume food everywhere as a result they consume less food and some places no food therefore food waste occurred.

### *Awareness*

Most of the invitees are not aware about multi-dimensional impact of food waste; they even do not bother or do not feel any guilt when they throw food. Cappellini and Parsons (2012) study stated that attitudes and a lack of knowledge and skills aren't primarily responsible for food waste, and so, blaming consumers is useless. Evans (2012a) suggested that attempts be made to increase the flexibility of food products to common challenges, such as container sizes, by focusing on the material context of food habits.

People's intentions to not waste food may be defined by their moral awareness, however this understanding does not always have an influence on their behaviour and the amount of food wasted (Stefan et al., 2013). Understanding, knowledge, and attitude are all linked to intention, according to the Theory of Planned Behaviour (Graham-Rowe, Jessop and Sparks, 2015; Visschers et al., 2015). This issue of the intention-behavior gap must be considered (Ajzen and Fishbein, 1980; Sheeran, 2002) - the desire to reduce food waste may not be

translated into action if one lacks real control, such as that provided by one's own conduct or by the availability of adequate instruments (Graham-Rowe et al., 2015). As a result, design interventions (Ganglbauer, Fitzpatrick and Comber, 2013) suggest that efforts to reduce food waste should be supported by such efforts.

### Remedies to Prevent Food Waste at Social Gathering

In spite of the fact that most consumers aren't a major danger to the environment, it's nevertheless vital that they take efforts to lessen their environmental impact. Individuals may have a

significant effect on the future of our food supply by learning how to decrease food waste. Prevention of food wastage is responsibility of guests and hosts both. Both parties should try to reduce food waste. In this particular paper researcher found some remedial actions through previous literature because food wastage made multiple negative impact on human as well as environment. It is estimated that around 1.3 billion tons of food is thrown away each year. Improving this issue necessitates reducing food waste and making well-informed food decisions. When food is thrown out, it is not just a waste of resources but a waste of money as well; food costs money.

**Table 2: Drivers and Remedial Actions to prevent food waste in social gathering**

Drivers	Remedial Actions
Awareness	<ul style="list-style-type: none"> <li>• Campaigns to raise public awareness against plate waste (Engström and Carlsson-Kanyama, 2004)</li> <li>• Awareness campaigns aimed towards personnel in kitchens (Betz et al., 2015)</li> <li>• Reducing food waste and educating caterers is a top priority. (Derqui et al., 2018)</li> <li>• Cost estimations of Food Waste (Wrap, 2011)</li> <li>• Telling your guests about it straight may sound a bit impolite. You can, however, get your napkins printed with this same message.</li> </ul>
Varieties	<ul style="list-style-type: none"> <li>• To eliminate confusion about the menu, make sure your employees are well-versed in its contents. (Bharuch,2018)</li> <li>• Another way to cut down on waste is to provide visible packaging instructions. (Bharuch,2018)</li> <li>• Reduce the number of side dishes supplied to assist reduce food waste, as shown in the research by (Falasconi et al.,2015). Kitchens should learn from their own experiences to stagger meal preparation so that dishes are ready at the same time and do not go cold before they are served.</li> <li>• To ensure that all of the meals are ready at the same time and don't go cold before they're served, new dishes should be made in smaller quantities and with less preparation time. (Levitsky et al., 2012)</li> </ul>
Size of Plates	<ul style="list-style-type: none"> <li>• The shape and size of a plate provide guidelines for the acceptable quantity of food to consume during a meal. (Wansink, 2006)</li> <li>• More food is served on bigger tableware by the average customer than on smaller dinnerware. (Wansink et al., 2006; Libotte et al., 2014).</li> <li>• Reducing the size of a plate has the ability to decrease food waste without sacrificing customer pleasure. (Kallbekken and Sælen, 2013)</li> </ul>
Attitude	<ul style="list-style-type: none"> <li>• The various attitude towards ethics of not wasting food has its variations such as attitude, quantity of food to meet its various demands etc. are examples of direct aspects (Cohen et al., 2014; Graham-Rowe et al., 2014; Qvested et al., 2011, 2013)</li> </ul>

Behavioral	<ul style="list-style-type: none"> <li>• People's intentions to not waste food may be defined by their moral awareness, but this knowledge does not necessarily influence their conduct or the amount of food wasted. (Stefan et al., 2013).</li> <li>• Adopt a healthier, more sustainable diet. (FAO UN, 2020)</li> <li>• Respect food (FAO UN, 2020)</li> </ul>
Serving environment & Availability of More Snacks	<ul style="list-style-type: none"> <li>• They should be displayed in smaller serving pot rather than large storage containers.</li> <li>• In the a la carte service, reduce the serving sizes of rice, noodles, and local fruits, but allow customers to add extra.</li> <li>• At the end of the buffet line, place the rice, noodles, and fruit dishes. (Papargyropoulou et al., 2019)</li> </ul>
Fear of Shortage of food	<ul style="list-style-type: none"> <li>• Do right estimation of no. of guest coming and try to made polite confirmation to guest and prime date of marriage is also matter of consideration.</li> <li>• Negative impact on human survival and environment are more important than social prestige.</li> </ul>

## Discussion and Conclusion

On the basis of empirical, peer-reviewed studies on food waste practices at homes, this study aimed to identify sociodemographic and psycho-social elements that influence household food waste practices, as well as food-related household behaviors themselves. Considering the expanding number of studies, we can conclude that research about consumer food waste that occurs in households is advancing well in general. As several writers have pointed out, food waste generation at the household level is a very complicated and diverse issue that is influenced by a wide range of factors and types of behavior. To begin with, our research has revealed that households are typically concerned and feel terrible about wasting food, as seen by our findings. It is more common for people to feel guilty about food waste because of personal worries such as money loss, rather than because of concerns about the environmental and societal consequences of food waste. Several studies have indicated that feelings of guilt, a sense of behavioral control, and unfavorable attitudes about food waste can all predict the desire to minimize food waste and/or the amount of food waste reported by participants.

Additionally, it has been shown that families frequently have ambiguous views about waste avoidance and that they frequently experience

conflicts between their good intentions to decrease food waste and their personal preferences for food safety, flavor, and freshness. Furthermore, limiting food waste may be at conflict with the desire to be a well-organized and conscientious housewife, giver, and host, among other things. As a result, individuals see a conflict between the need to care for oneself (and one's immediate family) and the need to reduce food waste, in which they are manipulating a slew of conflicting needs, goals, and worries, which they must negotiate. In terms of predictability, socio-demographic characteristics are less important. However, research has revealed that adults over the age of 65 waste less food, and that families with children waste more food than other households. Single-family households generate the greatest garbage, whereas bigger households generate the least waste per capita. Superfluous food is disposed of for a variety of reasons, including overprovision, inefficient storage, erroneous information regarding the shelf-life of food and date-labels, and a dislike for eating leftovers, among others. Furthermore, our research indicates that there is a lack of understanding about the social and environmental effects of food waste, which must be addressed in order to raise people's awareness of the broader ramifications of their wasteful conduct.

To address the concerns around food waste in a social context, this study gathered the information



related to food waste drivers in social gathering with special reference to weddings through extensive literature review and found that some infrastructural causes of food waste like how do the dishes display in buffet, size of containers, plates and bowl, even sequence of dishes display are also major consideration of food waste. Many of studies revealed some important solutions of this cause like if host of the party carefully select the venue and caterers then half work is done and many researchers suggested using smaller serving dishes rather than big containers, reducing portion sizes for rice, noodles, and local fruits in the a la carte service, but offering the option to add more, placing rice, noodles, and fruits at the end of the buffet line. The shape and size of a plate establish norms for how much food one should consume during a meal. There are many reasons of food waste which are individual factors, as we know that human behavior is most complex to understand but individual factors are significant cause of food waste in social gathering. Many of the studies revealed that awareness, attitude and behavior of guest are major causes of food waste in social gathering and household as well. According to a number of studies, ethical or moral behavior towards food waste is a fruitful solution but how to create the awareness about ethical behavior is an issue. Some studies offered solutions such as adopting a healthier, more sustainable diet, respect food, awareness campaigns addressed to guests (about plate waste awareness, kitchen waste awareness). Furthermore, previous studies indicated two more causes of food waste in social gathering. First is more varieties of dishes and more starters along with main course in party. In this case, as per literature generally guests are consuming more starters after they are not able to consume appropriate amount of main course as per host estimation. When more varieties of food are available to consume than guest plates overflow due to the desire to taste more dishes and a lot of food usually is left. For solution, many of the studies revealed side dishes accounted for the

greatest proportion of food waste, suggesting that limiting the number of side dishes offered may be beneficial. Kitchens should learn from previous mistakes and begin to stagger meal preparation so that all dishes are ready at the same time and do not become cold before they are delivered to the table. The number of dishes should be limited to those that match the tastes and preferences of the guests, and new dishes should be made in smaller quantities and with less preparation. Last and most prominent reason is a social reason which is fear of shortage of food. Most previous studies stated this problem because the host of party always having threat of shortage of food in any event because it is social prestige issue. If even one guest did not get food than it is crucial social issue and host loosed his social image. For solution, previous studies suggested to get the right estimation of number of guests coming and try to make polite confirmation to guest and prime date of marriage is also matter of consideration and negative impact on human survival and environment are more important than social prestige.

### **Limitation and Scope for Future Research**

The determinants of food waste and the corrective action or remedy investigated in this study are entirely based on an extensive literature review. Previous studies which were taken in account for this study were conducted in various locations and scenarios. This work would be better supported followed by deeper research taken in different context like during Covid-19 crises, weddings, conferences, hospitality industry, funeral rites to understand the differences in consumer food waste behavior. This study needs to be empirically tested with primary data backed by theoretical background which will increase its explanatory power and add some new knowledge to existing literature. It would be useful to identify other determinants of household food waste behavior, in addition to psychological determinants, which promote food waste prevention behavior.

## Contribution of Study

The results of this study can be an informative base for creating event management specifically catering services strategies to prevent food waste in social event. Another contribution to be considered as social awareness and this information may influence the household to ratify their behavior towards food wastage. The findings of the present study have implication for both household and host of social gathering who may use remedial actions to prevent food waste. This study adds knowledge on food waste behavior which prominently contributes to the society. It also throws light on sustainable consumption pattern and wellbeing of society with respect to food waste behavior. The study will be a value addition in existing pool of literature concerned with responsible consumption and sustainable practices.

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