

EXPLORING THE SOCIOCULTURAL DETERMINANTS OF FOOD WASTAGE BEHAVIOUR AT INDIAN WEDDINGS

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ABSTRACT

Design/methodology/approach – With the Theory of Planned Behaviour (TPB) as a theoretical foundation, the study uses a questionnaire-based survey method to identify the determinants of food wastage in Indian wedding ceremonies. It hypothesises an extended model of TPB and uses Structural Equation Modelling to test the hypotheses.

Purpose – Indian weddings exemplify situations where more food finds a way to dustbins than mouths. Sharma and Vrat (2018) mentioned that approximately one-fifth of the food at the social get-together and marriage functions is thrown away. The present study explores the impact of sociocultural and individual factors on food wastage behaviour in Indian wedding ceremonies.

Findings – Besides supporting the influence of TPB constructs, the results underline the role of social connectedness and abundant food availability at wedding ceremonies in shaping the food wastage behaviour of wedding guests.

Originality/value – Present study informs the academic discourse on the largely ignored problem of food wastage in Indian wedding ceremonies. It addresses the lack of deliberations around peculiarities of food consumption in India's sociocultural milieu and offers suggestions to control food wastage at individual and community levels.

Keywords: Food Wastage, Sociocultural, Behaviour, Food Abundance, Indian Weddings.

INTRODUCTION

Nearly one-third of the food produced worldwide annually is wasted (Grandhi et al. 2016; Gustavsson et al., 2011). The problem of food wastage is significant in both developed and developing nations as it has significant repercussions for the economy and environment. It is a pressing issue worldwide and is linked to the problem of global waste as a major antecedent Matharu et al. (2022). The UNEP Food Waste Index Report 2021 estimated that approx. ten per cent of global greenhouse gas emissions can be attributed to the food left unconsumed. The loss of natural resources, labour, energy and other resources invested in food production, and the opportunity cost of wasted food in terms of its utility when available for people suffering from hunger are consequences of the economic, social and environmental effects of food loss (Atkas et al., 2018).

Discarding the food fit for human consumption or using it for purposes other than consumption is referred to as food wastage. Such wastage may take place anywhere between the production and consumption of food. However, it is more prevalent in the last stages of the food supply chain, i.e., distribution and consumption (Morone, et al., 2018). Principato et al. (2015), in their study on household food wastage, considered food loss at the final stage of the food supply

chain, i.e., consumption as wastage of food. According to the UNEP Food Waste Index Report 2021, most of the approximately 931 million tonnes of food waste in 2019 originated in households. The report estimated Indian household food waste to be around 68,760,163 tonnes a year. According to the United Nations, approximately 40% of India's food goes to waste (Thacker, 2018). Given India's 101st position in the Global Hunger Index 2021, the country is likely to experience consequences of food loss at a scale even more severe. These numbers indicate an urgent need to address the burgeoning issue of food wastage in India and formulate prudent strategies to counter it (Caswell et al., 1998; Bhandari (2017). Yet, studies addressing the peculiarities of food consumption in the sociocultural milieu of developing countries such as India are scant (Mattar et al., 2018).

The problem of food wastage worldwide has captured the attention of policymakers, action groups and researchers. They have examined it through the lenses of morality (Graham-Rowe et al., 2015; Misiak et al., 2018; Marczak et al. (2019); Goh and Jie, 2019), sustainability (McCarthy and Liu, 2017; Michelini et al. (2018), collaborative food sharing Falcone & Imbert (2017); Parker et al., 2018; Morone et al., 2018), household consumption practices Ramukhwatho et al. (2018); Schanes et al., 2018; Elimelech et al. (2018); Romani et al. (2018) and individual idiosyncrasies (Mondejar-Jimenez et al., 2016; Russell et al. (2017); Sirieix et al. (2017); Wansink, 2018; Gaiani et al., 2018).

However, the absence of a comprehensive framework of food waste behaviour (Visschers et al., 2016) indicates a want for further research. Consumer behaviour, values, and attitude towards food wastage play a considerable role in shaping consumers' intentions to avoid food wastage. Ishangulyyev et al. (2019); Nair (2021). Aschemann-Witzel et al. (2015) encouraged future researchers to find a base from previous studies and investigate specificities of consumer behaviour related to food waste in terms of contexts, types of food and consumer segments. Atkas et al. (2018) recommended that future researchers use festivals other than Ramadan and occasions involving a heightened level of celebrations to investigate food wastage behaviour and quoted weddings as events involving a high level of food waste.

This paper is organised as follows: A literature review presents the problem of food wastage and identifies its determinants under the sociocultural context of Indian weddings. Subsequent sections explain the research methods used for addressing the research questions outlined in the study and the findings obtained thus. A discussion of the results follows. The final section summarises the conclusion, limitations, and scope for future research.

LITERATURE REVIEW

Food Wastage in Weddings

A significant number of weddings in India occur 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. Nuptial ceremonies also assert one's social standing by flaunting affluence and abundance, considered vital tools for forging social connections.

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 society. They further posited that such festivals 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 behaviour in social get-togethers, Misra et al.

(2011) pointed out that India is characterised by passionate celebrations of seasonal festivals, religious holidays and life events such as births, marriages and deaths. They noted that India's marriage ceremonies are used to assert one's affluence and social status, and a significant part of the expenditure is allocated to food.

Vyas (2012) informed that a team of professors from the University of Agricultural Sciences (UAS), Bangalore, surveyed 75 of Bengaluru's 531 marriage halls over six months and revealed that the city of Bengaluru wasted 943 tonnes of food fit for consumption with an estimated cost of above USD 4,57,00,000 during the wedding season. The study also found that the buffet system results in higher wastage than the traditional serving method. Misra et al. (2011) argued that Indian social gatherings mostly fail to care for food waste as plenty of food is thrown away deliberately or unintentionally. Sharma & Vrat (2018) agreed that Indian weddings and other social functions generate food waste at an alarming pace and this problem for an urgent examination. They recommended that future studies consider guests' social class, demographics, behavioural tendencies, and appearance rate to obtain more accurate results.

The above discussion brings us to the following research questions:

RQ1: How does the sociocultural context of Indian weddings impact food wastage behaviour?

RQ2: What are the determinants of food wastage behaviour in Indian wedding ceremonies?

RQ3: Do personal characteristics such as one's value system and demographic attributes affect their food wastage behaviour?

The following sections explore the above questions with the help of the theory of planned behaviour, literature on determinants of food wastage in wedding ceremonies, and the role of the sociocultural context in explaining the food wastage behaviour.

Theoretical Framework: Theory of Planned Behaviour

Ajzen (1991) proposed the theory of planned behaviour (Figure 1) as an extension of the theory of reasoned action, intending to predict and describe human behaviour in particular contexts. It postulates that intention to perform a behaviour has the most significant influence on the likelihood of it. Such intention, and consequently the behaviour, are products of attitude, subjective norms, and perceived behavioural control reflecting the role of personal, social, and perceived control-related issues Figure 1.

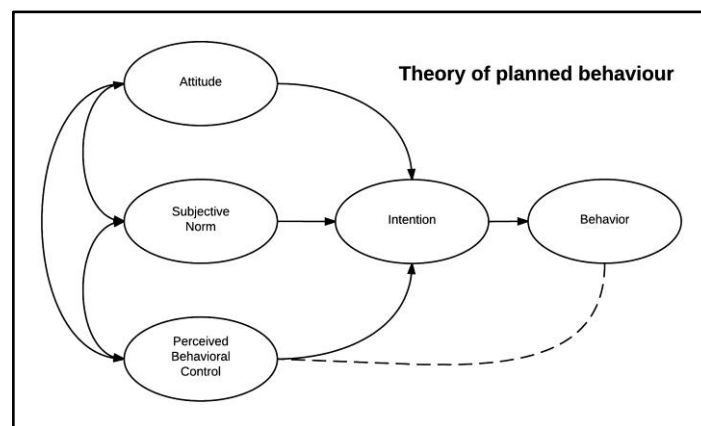


FIGURE I
THEORY OF PLANNED BEHAVIOUR: THE BASE MODEL

In the research investigations aimed at explaining consumers' decision-making processes in matters related to food, the theory of planned behaviour remains a pioneer and pivotal point of reference as a conceptual base. So far, researchers have widely employed it to carry out their inquiries about food waste in households (Stefan et al., 2013; Stancu et al. (2015); Visschers et al., 2016), its reduction (Graham-Rowe et al., 2015; Werf et al., 2019) and complexities of food waste behaviour of consumers (Mondejar-Jimenez et al., 2016; Russell et al., 2017; Aktas et al. (2018); Barone et al. (2019)). These and several other studies have established the merit of Ajzen (1991) as a theoretical framework for food wastage related research in various settings. Therefore, this study built a conceptual model (Fig. II) of food wastage in Indian weddings that predominantly obtained its structure from the Theory of Planned Behaviour. The model is presented at the end of the literature review.

Determinants of Food Wastage in Weddings

Mondéjar-Jiménez et al. (2016) called behaviour related to food wastage complex in the light of various studies that suggested that food wastage is generally a product of multiple reasons and actions instead of just one. On a similar line, Aktas et al. (2018) postulated that the likelihood of food getting wasted depends on a mix of multiple behaviours. The following sections discuss the factors that determine the food wastage behaviour in social events like weddings:

Personal Norms

Fishbein & Ajzen (1975) postulated that one's knowledge about behaviour and its outcomes affect his attitude towards that behaviour. Principato et al. (2015) considered expertise and degree of concern regarding food waste as important sets of variables. They found a positive relationship between awareness level and efforts to decrease wastage. Visschers et al. (2016) suggested that personal attitudes and norms such as encouraging the belief that regards wastage of food as wrong, pointless, and immoral should motivate the consumers.

Social Connectedness

Sharma & Vrat (2018) agreed that a society's socio-economic features and culture-driven customs determine the volume of food wastage. They underlined peer pressure as one of the causes of wastage. Nakata & Kawai (2017) discussed the social facilitation effect where people find the food more delicious and consume it in greater quantity in others' presence. They subsequently stated that the quality of social relationships influences this social facilitation. Porpino (2016) considered social connectedness a potential determinant of food waste among households and posed research questions about the likelihood of a positive relationship between social connectedness and food waste and the possible moderators of this relationship.

Food Abundance

Ponis et al. (2017) suggested that tossing away food resulting from preparation in excess quantity or serving large amounts strongly points to food waste. While explaining the impact of larger portion sizes on perceptions, Marchiori et al. (2014) suggested that people are likely to overeat when someone else decides on the portion. There is no restriction on refills. Sharma and Vrat (2018) added that most guests at weddings take more on their plates than what they can eat, resulting in a high volume of leftovers in the dustbins.

Aktas et al. (2018) suggested that social get-togethers lead to food being served in abundance as it is considered a mark of hospitality. They further pointed out that such surplus servings cause wastage of unconsumed food. Thus, the more social get-togethers one attends, the more times he puts himself in a situation of food abundance, thus favouring food wastage.

Personal Characteristics

In the context of grocery shopping in households, Koivupuro et al. (2012) argued that gender has a significant role in determining the causes of food wastage. However, despite highlighting single women as the biggest producer of avoidable food waste per person, they could not identify the reason behind the positive impact of grocery shopping by women on the volume of avoidable food wastage.

Porpino (2015) underlined the relatively lesser knowledge about antecedents of food waste in the case of low-income scenarios. He further suggested that as food is considered a symbol of wealth in certain cultures, over-preparation may stem from a need for asserting one's status. Low-income families may be driven by such needs when it comes to wastage of food in their households. Thus, he stressed the need to inquire about the possibility of more wastage in low-income families Figure 2.

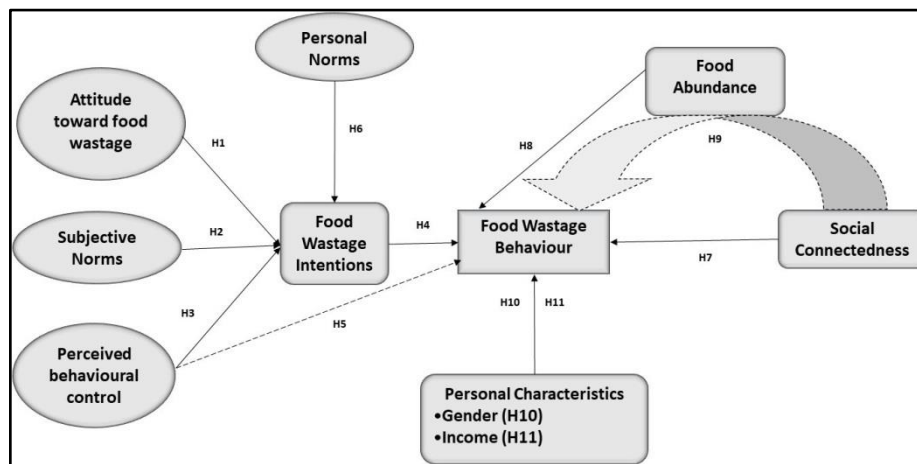


FIGURE 2
CONCEPTUAL FRAMEWORK OF FOOD WASTAGE BEHAVIOUR IN INDIAN WEDDINGS

Figure 2 depicts the conceptual framework of this study. The hypothesised relationships presented in the figure have been tested by analysing the primary data.

RESEARCH METHOD

Research Hypotheses

Based on the review of literature presented in the previous sections, the study proposes the following research hypotheses:

H₁: A positive attitude towards food wastage leads to higher intentions to avoid food wastage at weddings.

H₂: There is a positive relationship between subjective norms about food wastage and intentions to avoid food

wastage at weddings.

H₃: A higher level of perceived behavioural control leads to higher intentions to avoid food wastage at weddings.

H₄: A higher intention to avoid food wastage leads to a lower food wastage behaviour at weddings.

H₅: A lower perceived behavioural control leads to higher food wastage behaviour at weddings.

H₆: There is a positive relationship between personal norms related to food wastage and intentions to avoid food wastage at weddings.

H₇: Social connectedness is positively related to food wastage behaviour in Indian weddings.

H₈: Food abundance is positively related to food wastage behaviour in Indian weddings.

H₉: Food abundance mediates the relationship between social connectedness and food wastage behaviour in Indian weddings.

H₁₀: There is a significant difference between the food waste behaviour of young adult male and female consumers.

H₁₁: There is a significant difference between consumers' food waste behaviour from low-income families and high-income families.

Materials

A comprehensive review of the literature helped create a sound conceptual base for the study. The databases explored for extant research include Science Direct, Jstor and Google Scholar. The keywords used for searching these databases are food wastage, food loss, food wastage in Indian weddings, social relationships and food waste. The initial search returned more than sixty research papers further screened for the relevance regarding the research problem and proposed survey-based methodology. We also accessed various reports of the United Nations (on population and food wastage) and news articles to assess the problems and prospects of food wastage in India. The literature reviewed for this study helped carve out a conceptual framework and the measurement instrument used for data collection.

Design and Procedure

The purposive sampling technique was employed to obtain a sample from a mixed population regarding gender and family income. We drew samples from business schools running courses at the graduate and postgraduate levels in the Indian city of Varanasi. Since food wastage at weddings is witnessed and can be produced by anyone who attends them, the only criteria used to screen the respondents were their age and recent attendance in wedding ceremonies. Some staff members and students declined the request to participate in the survey resulting in 517 participants. The participants were contacted during their respective institutions' working hours and briefed about the purpose and scope of the survey. We shared the questionnaire with the participants upon receiving their consent.

Sample and Data

A closed-ended non-disguised structured questionnaire was designed to obtain information about food wastage behaviour at Indian wedding ceremonies. The studies cited in the literature review section led to the identification of the primary constructs of the study. Subsequently, the researchers framed construct measurement items informed by Stefan et al. (2013), Visschers et al. (2016) and Atkas et al. (2018) as statements. Anchored on a five-point ordinal (Likert) scale ranging from 1='strongly disagree' to 5='strongly agree', the complete instrument was subjected to pilot testing to test the reliability of the questionnaire.

Five hundred seventeen questionnaires were distributed among the students and staff of

previously mentioned higher education institutions in Varanasi. Four hundred sixty-one filled questionnaires were collected back, ensuring a response rate of 89%. Such a high response rate can be attributed to the high degree of relevance to food wastage in wedding holds and the in-person approach to data collection. Twelve questionnaires had incomplete or dubious data and were eliminated from the data analysis process. Kline (2011) referred to SEM as a “*large sample technique*” (p.11) and pointed out that it is difficult to determine a sufficiently large sample because sample size requirements are related to various factors. Verma et al. (2019) suggested that the sample size must be ten times the parameter/items. Therefore, a sample size of 449 was considered adequate as it is more than ten times the questionnaire items.

The respondents’ demographic profile was quite balanced in gender, with equal participation of male and female respondents. The situation was slightly different in terms of income as almost 54% of participants reported their family income to be more than Rs. 5 Lacs.

A total of 35 items in the model were subject to principal component analysis to the data’s dimensionality. Exploratory Factor Analysis (EFA) was conducted using varimax rotation to reduce many variables into a smaller set of interpretable underlying factors using SPSS version 21. Out of these 35 items, only 30 items were obtained from factor analysis for further analysis, while the rest were eliminated due to low factor loading (less than .5). Also, a total of 8 factors were identified, which accounted for 75.189 per cent of the total variance. The value of KMO was 0.842, which indicated that the data was suitable for factor analysis and sampling is adequate at the significance level of 0.000 (Cerny and Kaiser, 1977). Table I below shows the factor loadings from EFA Table 1:

	Component							
	1	2	3	4	5	6	7	8
FWA6	0.841							
FWA3	0.835							
FWA5	0.834							
FWA2	0.825							
FWA1	0.728							
FWA4	0.712							
FWPBC5		0.849						
FWPBC3		0.848						
FWPBC2		0.842						
FWPBC4		0.816						
FWPBC1		0.757						
FWB3			0.849					
FWB4			0.838					
FWB1			0.814					
FWB2			0.763					
FWSN3				0.958				
FWSN2				0.950				
FWSN1				0.847				
FWPN1					0.882			
FWPN3					0.879			
FWPN2					0.851			
FWI3						0.841		
FWI2						0.835		
FWI1						0.835		
FWSC1							0.829	

FWSC2							0.808	
FWSC3							0.776	
FWFA1								0.811
FWFA2								0.810
FWFA3								0.786

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

Using the AMOS version 21 statistical software, CFA and SEM are applied to examine the psychometric properties of the scales and test the hypotheses of the research model. Several statistical tests and criteria, such as Cronbach’s Alpha values, composite reliability and convergent and discriminant validity, were employed to assess the instrument’s robustness. Besides, thorough testing of assumptions for multivariate techniques and preliminary data analyses were carried out, including normality and outlier analysis Stöckli et al. (2018).

The validity of the constructs was assessed through confirmatory factor analysis. The study used Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Root Mean Square Residual (RMR) to judge the model fit. The results of the CFA indicate a good measurement model fit of the proposed factor structure (Chi-square = 817.692, CMIN/DF= 2.169, GFI= 0.898, NFI= 0.909, IFI= 0.949, TLI= 0.941, CFI= 0.949, RMSEA= 0.051, RMR= 0.031). The recommended value for GFI, NFI, IFI, TLI and CFI is ≥ 0.90 , and for RMSEA and RMR, it is ≤ 0.80 (Malhotra and Dash, 2014). Thus, the measurement model fitness was observed in the CFA measurement. Table 2 below presents the standardised factor loadings Table 2:

Constructs	Code	CFA Factor Loadings	Cronbach's Alpha	CR	AVE
Food Waste Behaviour	FWB1	0.762	0.860	0.861	0.608
	FWB2	0.706			
	FWB3	0.818			
	FWB4	0.828			
Food Waste Attitude	FWA1	0.720	0.903	0.904	0.611
	FWA2	0.770			
	FWA3	0.840			
	FWA4	0.716			
	FWA5	0.796			
	FWA6	0.837			
Subjective Norms	FWSN1	0.783	0.939	0.944	0.851
	FWSN2	0.980			
	FWSN3	0.989			
Personal Norms	FWPN1	0.872	0.901	0.902	0.756
	FWPN2	0.819			
	FWPN3	0.914			
Perceived Behavioural Control	FWPBC1	0.709	0.898	0.899	0.640
	FWPBC2	0.793			

	FWPBC3	0.838			
	FWPBC4	0.789			
	FWPBC5	0.863			
Intentions to Avoid Food Wastage	FWI1	0.815	0.862	0.863	0.678
	FWI2	0.792			
	FWI3	0.861			
Food Abundance	FWFA1	0.710	0.796	0.798	0.569
	FWFA2	0.749			
	FWFA3	0.802			
Social Connectedness	FWSC1	0.839	0.834	0.836	0.630
	FWSC2	0.798			
	FWSC3	0.741			

The construct validity is defined to comprise convergent and discriminant validities. First, convergent validity for a construct is assessed by three criteria: (1) all item loadings in a construct should be greater than 0.70 and statistically significant, (2) Composite Reliability (CR) for a construct should exceed 0.60 or higher (Bagozzi & Yi, 1988) and, (3) Average Variance Extracted (AVE) for a construct should be greater than 0.50 (Fornell and Larcker, 1981). Next, discriminant validity is assessed using the criterion that AVE’s square root for a construct should be greater than its correlations with other constructs. Reliability and validity of scales were measured using stats tools package- Kolob Kreations developed by James Gaskin Table 3.

Table 3
INTER-CONSTRUCT RELATIONSHIP

	FWSC	FWA	FWPBC	FWB	FWSN	FWPN	FWI	FWFA
FWSC	0.794							
FWA	0.363	0.781						
FWPBC	0.209	0.262	0.800					
FWB	0.266	0.266	0.235	0.780				
FWSN	0.204	0.173	0.186	0.179	0.922			
FWPN	0.575	0.259	0.149	0.234	0.138	0.869		
FWI	0.277	0.312	0.363	0.222	0.259	0.253	0.823	
FWFA	0.289	0.322	0.272	0.311	0.250	0.139	0.441	0.755

Tables 2 and 3 illustrate the findings of construct validity and reliability. The result indicates a high level of reliability and a high degree of convergent and discriminant validity as the required indices were within the acceptable limit and fulfilled all the requirements for the CFA tests. Hence, the measurement model was considered suitable for the next level of analysis involving Structural Equation Modelling (SEM) Bravi et al. (2019).

FINDINGS

A structural model was developed to examine the causal relationship among the constructs

in the research model. The structural model was evaluated by examining the standardised path coefficients, t-statistics, and their statistical significance for testing the hypotheses. The model-fit indices for structural model provided evidence of comparatively good model fit (Chi-square = 1147.007, CMIN/DF= 2.896, GFI= 0.856, NFI= 0.873, IFI= 0.913, TLI= 0.904, CFI= 0.913, RMSEA= 0.065, RMR= 0.115). As summarised in Table 4 below, the structural model supported all causal links hypothesised to explain the food wastage behaviour during Indian weddings Table 4:

	Structural Relationship			Standardised Coefficients	Unstandardised Coefficients	S.E	T-Value	P-Value	Result
H1	FWA	→	FWI	0.192	0.222	0.058	3.808	***	Accepted
H2	FWSN	→	FWI	0.172	0.130	0.036	3.585	***	Accepted
H3	FWPBC	→	FWI	0.279	0.302	0.055	5.469	***	Accepted
H4	FWI	→	FWB	0.113	0.099	0.046	2.153	0.031	Accepted
H5	FWPBC	→	FWB	0.134	0.126	0.051	2.490	0.013	Accepted
H6	FWPN	→	FWI	0.157	0.167	0.053	3.131	0.002	Accepted
H7	FWSC	→	FWB	0.167	0.156	0.053	2.945	0.003	Accepted
H8	FWFA	→	FWB	0.211	0.217	0.060	3.584	***	Accepted
H9	FWSC	→	FWFA	0.288	0.264	0.053	4.941	***	Accepted

The present study followed Baron and Kenny’s (1986) three-step measurement model for mediation to test the mediating role of food abundance in social connectedness- food wastage behaviour link. Table 5 shows that FWFA mediates the relationship between FWSC and FWB as the total effect’s coefficient value is greater than the direct impact Table 5.

IV	MV	DV	IV → DV	IV → MV	MV → DV	Indirect Effect	Total Effect	Hypothesis
FWSC	FWFA	FWB	0.167	0.288	0.211	0.061	0.227	Accepted

A two-sample t-test assessed the effect of gender and income on respondents’ food wastage behaviour. The average male respondent’s food wastage behaviour was found to be slightly higher (M = 4.1759, SE = .70181) than that of a female respondent (M = 4.1357, SE = .68678). However, this difference was statistically insignificant t (447) = .614, p = >0.05, suggesting no significant relationship between the gender of the respondents and their overall food wastage behaviour.

In terms of income, the respondents were classified into two broad groups – annual family income below (low income) or above (high income) Rs.5 Lakhs. An average high annual income respondent’s food wastage was found to be slightly more (N= 209, M = 4.1830, SE = .69055), than that of less annual income respondent (N= 240, M = 4.1323, SE = .69739). However, this difference could not find any statistical significance t (447) = -.772, p = >.05. Thus, there was no significant link between the respondents’ income and food wastage behaviour Hindustan Times (2019).

DISCUSSION

The findings above indicate that some of the most significant determinants of minimisation and reduction of food wastage are individual and social. Hypotheses H1 to H5 were formulated in

the light of the theory of planned behaviour. They were expected to find support due to the extensive application of TPB in studies explaining behaviour. The hypotheses from H6 to H11 were proposed based on a thorough literature survey. As the results presented above show, all hypothesised relationships except those involving demographic variables (H10 and H11) were supported by empirical data Insights (2019).

The study found a positive relationship between attitude towards food wastage and intentions to avoid food wastage in the wedding ceremonies as hypothesised in H1. H2 and H3 are also supported, indicating a positive relationship of subjective norms and perceived behavioural control with the intention to avoid food wastage. In line with the studies like Graham-Rowe et al. (2015), Visschers et al. (2016), the present study shows that consumers' attitudes towards food wastage, personal norms and perceived behavioural control exercise a great deal of impact on their intentions to avoid food wastage RESILIENCE (2017).

H4 suggested an inverse relationship between intentions to avoid food wastage and food wastage behaviour. The empirical support for H4 points towards the impact of individuals' intentions on actual behaviour. Therefore, a systematic effort is required to bring awareness about the evils of food wastage and the significant difference that individual food habits and practices can bring to the overall milieu of food wastage and loss. Such effort will likely bring positive change in the cognitive belief system leading to stronger intentions to avoid food wastage.

As hypothesised in H5, the perceived behavioural control has a negative correlation with the food wastage behaviour. This suggests that individuals with a lower sense of control regarding their behaviour around food are more likely to engage in behaviours leading to food wastage. It indicates that if one perceives the presence of external factors that impede the reduction of food wastage, he is unlikely to follow through with the actual behaviour that can reduce the amount of food wastage in the weddings Halloran et al. (2014).

H6 proposed that in addition to subjective norms, an individual's actions are also impacted by his sense of obligation towards performing a particular behaviour, i.e., personal norms (FWPN). The positive correlation between personal norms and intentions to avoid food wastage found in this study underlines the importance of one's personal beliefs and value system for adopting or avoiding a particular action. Though conformance to socially acceptable and desirable behaviours exercise a great deal of control over one's actions, the beliefs that he received during his upbringing and acquired through his worldly interactions shape one's willingness and commitment towards socially approved or disapproved behaviours. Avoiding food wastage during a wedding ceremony is a matter of personal preference and predispositions or, in other words, one's sense of right and wrong.

Aktas et al. (2018) asserted that it is possible to describe food wastage behaviour with the help of TPB "*as well as contextual factors such as planning or social relationships*" (p.668). H7 and H8 presented an abundance of food (FWFA) and social connectedness (FWSC) respectively as independent variables to assess the impact of contextual factors that come to the fore in weddings ceremonies. Both variables were positively related to food wastage behaviour which suggests that an abundant amount of food served at wedding ceremonies and one's attitude towards maintaining social relationships impact food wastage. Indian weddings, known for their grandeur and extravagance, use food to symbolise a family's prosperity and social standing. The vast number of cuisines and dishes entice overconsumption. Consequently, wastage while self-serving buffet system and larger than usual utensils combined with misestimation of required food led to the wastage.

H9 hypothesised the indirect role of food abundance in the relationship between social connectedness and food wastage behaviour. It was supported by the results, which shows that the

number and nature of an individual’s social connections determine his likelihood of attending the wedding functions in the first place. The more social functions one has obligations towards, the more he is in food wastage situations.

Our findings underline the need for a collective awakening and social movement that steers community members’ actions towards responsible food consumption practices and reward such practices with social affiliation and approval. Such social activity will also reverse the impact of social connectedness on food wastage. A higher number of social connections will motivate to avoid food wastage instead of bringing more excuses for contributing to it.

Lastly, the abundant availability of food at weddings that often leads to wastage and is considered vital for the upkeep of conventional charade in one’s social circles has emerged as a significant cause of wastage in wedding ceremonies. This finding underlines the role of availability and, to a certain degree, convenience in determining one’s behaviour. The abundant availability of food is a regular feature at Indian wedding ceremonies. However, it would be incorrect to consider it an invariably deliberate decision of the hosts. Although years of sociocultural conditioning prompt people to treat wedding ceremonies as an event that mandates conspicuous consumption in some parts of the country, a few other behavioural indiscretions may also drive the excessive availability of food. For example, it is considered rude to dictate the number of friends or family members a guest can bring to the wedding. Widespread adoption of buffet systems also makes it challenging to limit guests’ food consumption without offending them in the process. Another issue is the wrong estimation of food requirements. Thus, the more socially active an individual is, the higher the number of social gatherings, including wedding ceremonies he is likely to attend. The greater his chances of encountering the abundant amount of food resulting in food wastage behaviour. The obvious, though highly ill-considered, the inference is to limit one’s social engagements, thereby decreasing the occasions of wastage. However, such a suggestion is unpragmatic, unhealthy and difficult to implement.

This study failed to support the impact of demographical variables, i.e., gender (H10) and income (H11), on respondents’ food wastage behaviour. This establishes an absolute indifference towards the problem of food wastage in men and women across the economic echelons. Clearly, interventions to manage and control food wastage are equally relevant in various population segments Figure 3.

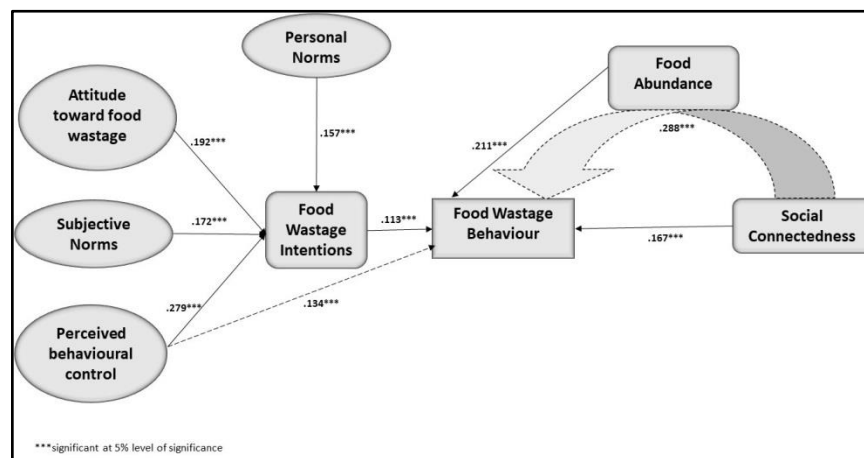


FIGURE 3
MODEL OF FOOD WASTAGE BEHAVIOUR IN INDIAN WEDDINGS

It is evident from the discussion above that it is essential to shift towards a more sustainable food consumption system. Conspicuous consumption must be moderated; yield increased, governance improved and ultimately waste reduced (Godfray and Garnett 2014). Food waste reduction and proper waste management systems can save economic resources, contribute to food security, and minimise the negative impacts of food waste on waste management systems (Thyberg et al., 2016). This has large scale managerial and policy implications as well.

A practical implication is in proper waste management. Landfilling is the most preferred form of food waste disposal method. However, food waste tends to degrade faster than other landfilled organic materials, has a high methane yield, and does not contribute to considerable biogenic sequestration in landfills (Levis and Barlaz 2011). This presents an opportunity to come up with sustainable solutions to waste disposal. The most favoured food waste-handling approach is reuse and recycling, whereas dumping, ground-filling and producing biogas are considered the last recourses (Betz et al., 2015). Food waste must find its way into the circular economy.

Managing food waste through informal routes, such as donating it to charity or feeding it to pets, may also benefit the environment Reynolds et al. (2014), Reynolds et al. (2015). Thus, managing food distribution systems is yet another essential requirement. Private and public enterprises can work together for setting up food banks. Presently, India has a vast number of operational food banks. Food banks in India were adopted as part of an integrated development approach to include malnutrition, water, sanitation, and hygiene initiatives to develop training skills to break the cycle of poverty. A food bank (as a distribution enterprise) can offer a wide range of ancillary programmes to its beneficiaries depending on the communities' socio-economic structure and needs. As food banks have a significant presence in the community, they can be used as a model to scale such programs through NGOs to provide better reach, ease of implementation, and resource development for the community's needs (Indian Food Banking Network, 2014). Well planned supply chains can divert waste generated at Indian weddings to these food banks for the impoverished (Miroso et al., 2018; Pirani and Arafat, 2016; Amato & Musella (2017); Bharucha (2018)

Governments must create strategic prevention programs to reduce food waste and enhance recovery programs to divert food waste from disposal (landfilling or incineration) to biological treatment (composting or anaerobic digestion [AD]). This can help capture nutrients and energy. Along with prevention policies, energy recovery programs need encouragement.

Within the service sector, Ravandi & Jovanovic (2019) established that almost 30% of plate-waste was reduced in all-you-can-eat services by decreasing the plate size. Thus, in the Indian context, reducing the plate size in all-you-can-eat buffets or eliminating the buffet system can make a difference. Yet another way is to shift to the Indian traditional method of serving food, reducing the number of dishes, serving the main course immediately after the first course etc.

Since our study shows that food wastage is primarily a behavioural issue, an effective way of handling it within the service sector is to employ nudges. They can be designed to give subliminal prompts intended to induce a behavioural change towards food wastage. Nudges can be instrumental in food waste reduction in various settings Dolnicar et al. (2020); Kallbekken and Sælen, 2013; Stockli et al., 2018). One can use particular nudges such as: to remove side plates Camilleri-Fenech et al. (2020), reduce plate sizes (Tatano et al., 2017), provide subliminal societal suggestions like placards or posters (Kallbekken and Sælen, 2013), box leftovers Hamerman et al. (2018) etc.

CONCLUSION

The present study contributes to a neglected food wastage issue that has received little attention from researchers and policymakers in India. Wedding ceremonies or other social functions that see a similar grandeur and outlay level have been a significant hub of food wastage in India for a long time now. Still, we hardly see public administration efforts to curb the colossal mishandling of food or at the societal level to modify the community practices and individual behaviours responsible for aggravating the problem. Wastage of a large amount of edible food is a common sight during the Indian wedding season. The key to controlling the behaviours that maximise such wastage will emerge from the very source of those behaviours, i.e., social and personal influences on individual decision making. The present study identifies the factors that can influence food wastage behaviour, particularly in wedding ceremonies. It offers suggestions to create a positive difference in this regard, both at an individual and community level.

The most significant contribution of this work is underlining the role of a community in shaping its members' food wastage behaviour through shared value systems, normative standards of societal exchanges, and reward mechanisms. It is easy to foresee the response to a public policy or regulation that restricts the food-related decisions in private ceremonies. The greater likelihood is that a large section of the society would perceive such a system as unnecessarily prohibitive and an unwelcome interference. Such construal is bound to defeat any such initiative by the administration. Therefore, food wastage is not entirely the government's burden like every social problem. The study strengthens the dialogue around the need to create a social movement for addressing this issue at the consumer level. The findings of this study can help design initiatives that find greater acceptance and effectiveness.

The findings uncovered in this study call for further research to discover the personal and social biases that may discourage one's intentions of controlling food wastage in his surroundings. Moreover, qualitative investigations are needed to substantiate empirical studies' findings by accounting for varied perspectives of stakeholders of wedding business, including hosts and guests, catering service providers, NGOs working towards collecting excess food. We believe that such inquiries will help obtain practical solutions and evoke a thought process around solving a generally ignored social disorder among people in the most optimal position to make a difference.

While it furthers the narrative of India's food wastage behaviour, the present study is not free from the limitations. Foremost of such limitations is the sample consisting of the students and staff of educational institutions in Varanasi city. Though the sample demonstrated significant diversity in terms of gender and income, the generalizability of the study's findings could be low due to the limited geographical, cultural, and demographic representation of the population, i.e., wedding guests. Thus, future studies may consider carrying out inquiries with samples more diverse in terms of age, gender and educational backgrounds. They may also concentrate on other social contexts and environmental settings such as festive seasons and the unorganised hospitality sector that involve wastage of food.

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