

Today's Food Habits and their Impact on Practicing Civil Engineers in India – an Overview

N. SIVAPIRAN¹, G. MURUGESAN²

Ph.D. Research Scholar in Business Administration, VHNSN College, India¹

Associate Professor and Head, Department of Business Administration, VHNSN College, India²

Abstract: Civil engineers (CEs) are instrumental in shaping the built environment, often managing demanding schedules and physically intensive fieldwork. In India, the dietary habits of practicing CEs offer insights into how professional stress, lifestyle demands, and cultural factors influence daily nutrition. This study provides an overview of prevailing food consumption patterns among CEs in India and their impact, examining aspects such as meal frequency, dietary choices, meal timing, and typical dining locations. The analysis is further supported by observed trends and preferences identified through a structured sample survey.

Keywords: Civil Engineers, Dietary Habits, Food Consumption Patterns, Lifestyle and Nutrition, Meal Frequency and Timing, India, Survey Analysis

I. INTRODUCTION

"India hosts a vibrant construction industry, with thousands of CEs actively working across government and private sectors. The nature of their profession—marked by frequent site visits, irregular work hours, and extensive travel—often impacts their eating habits. As urban food landscapes evolve and fast-food consumption rises, it becomes increasingly important to explore how these engineers manage their nutritional needs." In the fast-paced and physically demanding field of civil engineering, professionals are often required to work long hours under varying climatic conditions, frequently shifting between construction sites, office environments, and field inspections. These dynamics significantly influence their lifestyle choices—most notably, their food habits. In recent years, India's food culture has undergone rapid transformation due to urbanization, increased availability of processed foods, changing work routines, and a growing dependence on outside meals. Practicing CEs, owing to the nature of their work, are particularly susceptible to these changes.

Unlike other sedentary professions, civil engineering demands a blend of physical endurance, mental alertness, and rapid decision-making, all of which are closely linked to one's nutritional intake and meal patterns. Irregular eating schedules, skipped meals, consumption of fast food, and dehydration are common, becoming increasingly among CEs, project managers, and consultants. These dietary patterns may have short- and long-term health implications such as fatigue, reduced productivity, gastrointestinal issues, or lifestyle diseases like diabetes and hypertension.

This paper aims to provide an overview of current food habits among practicing CEs in India by examining meal timing, dietary preferences, frequency of eating out, and associated health concerns. It also explores how workplace constraints and socioeconomic factors influence their dietary behavior.

II. LITERATURE REVIEW

Prabhakar et al. (2020)^[1] highlights a significant concern regarding the dietary habits of professionals engaged in field-intensive occupations. These individuals often face demanding schedules and challenging work environments, leading them to skip meals or opt for readily available, high-carbohydrate fast food options due to convenience. The study sheds light on the pressing issue of poor dietary habits among professionals in field-intensive jobs. By accepting the factors contributing to meal skipping and fast-food consumption, stakeholders can build up targeted interventions to promote healthier eating behaviors, ultimately improving the well-being of this workforce segment.

Ministry of Health and Family Welfare (2019)^[2], in their influential study conducted: as part of the South Indian Nutrition Survey, brought forward significant insights into the dietary behaviors of site workers in Tamil Nadu. Their

findings exposed that over 30% of construction and site workers preferred consuming "tea stall tiffins" for breakfast. This preference was primarily attributed to two major factors: accessibility and affordability. The researchers emphasized the need for broader nutritional interventions and public health strategies aimed at improving the quality of affordable food options available to labor-intensive workers. In sum, it lights not only on the practical realities influencing food choices among Tamil Nadu site workers but also on the underlying economic and structural factors that frame these everyday decisions. Their study remains an important contribution to understanding occupational nutrition behaviors in India.

A. Additional Quick Data Points

Several studies highlight the critical impact of meal patterns on the health and performance of working professionals like civil engineers:

Individuals who skip breakfast are 27% more likely to experience fatigue and concentration difficulties. (Source: Richard Ofori-Asenso, Alice J Owen, Danny Liew, 2019)^[3]

Skipping any major meal can lower workplace productivity by 20–30%. (Source: International Labour Organization, 2005)^[4]

Field workers who skip meals face a 21% higher risk of gastrointestinal issues. (Source: Pot, Almoosawi, Stephen, 2016)^[5]

A research from Construction Safety indicated that Meal-skipping workers are twice as likely to cause minor workplace accidents. Skipping meals increases the chance of low blood sugar, leading to dizziness or accidents, which are critical for engineers working on construction sites. (Source: McCurley et al., 2022)^[6]

People who skip meals frequently are more prone to musculoskeletal injuries due to fatigue and loss of coordination (Source: Kirsch Micheletti, J., Bláfoss, R., Sundstrup, E. et al. 2019)^[7]

Most of the individuals studied had poor sleep quality, and the higher frequency of ultra-processed foods consumption. Clinical Nutrition concomitant with lower consumption of fresh and minimally processed foods during the pandemic is a factor associated with a higher chance of poor sleep quality. Furthermore, replacing a home-cooked meal prepared mostly of fresh/minimally processed foods with ultra-processed foods frequently was allied with poor sleep quality. 354 L.A.A. Menezes-Júnior, A.C.S. Andrade, H.N. Coletro et al. Clinical Nutrition ESPEN 49 p348e356 (2022)^[8]

III. METHODOLOGY

- **Sample Size:** 150 practicing CEs from various states of India
- **Tools Used:** Structured questionnaire, phone interviews, and field observation
- **Parameters Studied:**
 - Breakfast intake: Yes/No, Time, Type of food
 - Lunch patterns: Yes/No, Time, Type of food
 - Dinner choices: Yes/No, Time, Food preference
 - Place of intake: Home, Hotel, Site
 - Frequency of eating out
 - Meals suggested & why

IV. DISCUSSION

A. Morning Breakfast Habits

Why Breakfast is a Must for a Practicing Civil Engineer (PCE)? Breakfast is acting a crucial role in the daily routine of a PCE. As it replenishes the body after an overnight fast and primes the mind for a physically and mentally demanding day. CEs typically begin work early and are accountable for making critical & technical decisions, supervising - teams, and conducting on-site inspections. These tasks require sustained concentration, physical stamina, and mental clarity. Skipping breakfast can result in fatigue, irritability, and diminished cognitive performance, which in turn can compromise productivity and safety on the job site. A nutritious and balanced breakfast helps maintain stable energy levels and mental sharpness, allowing engineers to manage their morning workload effectively.

The following tables illustrate the percentage of CEs who regularly consume breakfast, those who skip it (table I), and provide detailed data on the type of breakfast consumed (table II), the timing (table III), and the location of intake (table IV).

Table I BREAKFAST HABIT - SKIP

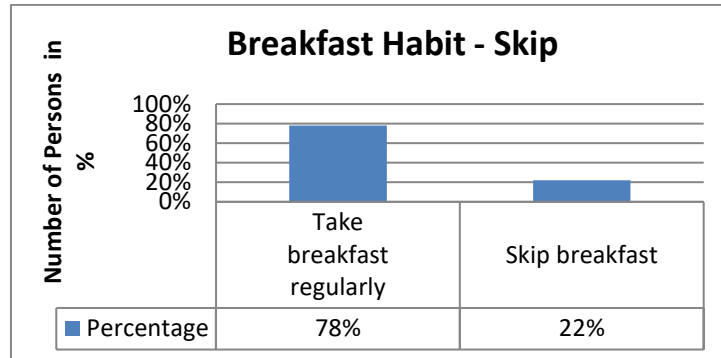


Table II BREAKFAST - TYPE

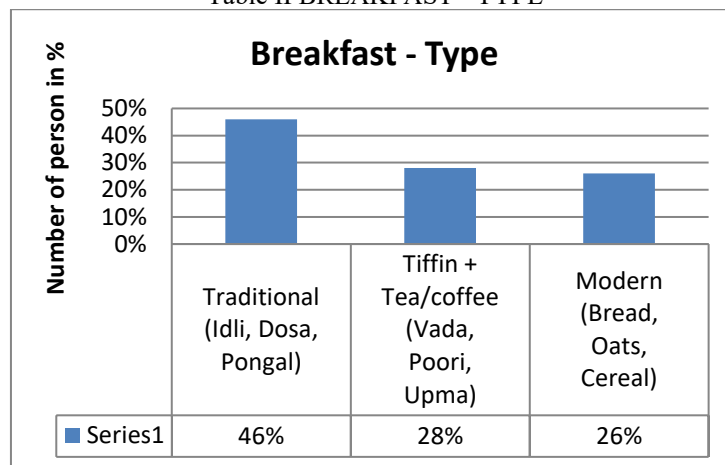


Table III BREAKFAST - TIME

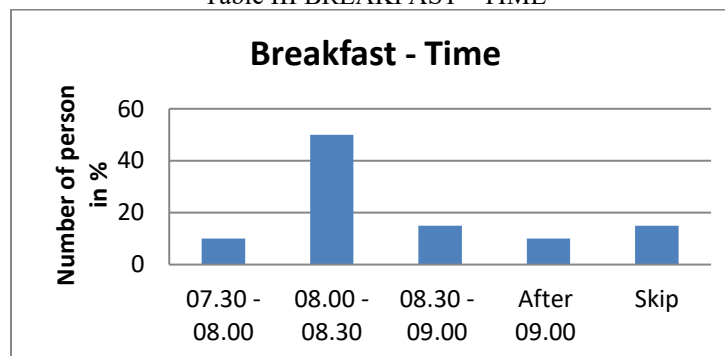
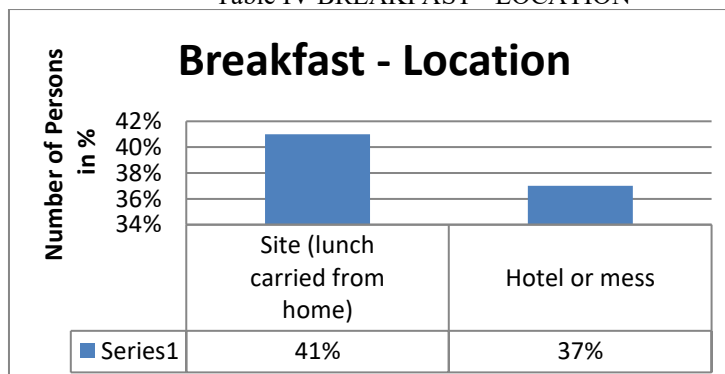


Table IV BREAKFAST - LOCATION



B. Lunch Patterns

Why lunch is a must for a PCE? Lunch plays an essential role in maintaining mid-day nutrition, offering the energy required to sustain productivity and concentration through the afternoon. For CEs, this period often includes physically and mentally demanding tasks such as site supervision, technical evaluations, and client consultations. Skipping or consuming an inadequate lunch can lead to energy slumps, decreased alertness, and impaired decision-making—factors that may compromise work quality and increase the risk of on-site errors or accidents. A balanced and timely lunch helps replenish glycogen stores, stabilize blood sugar levels, and support both cognitive function and physical endurance for the remainder of the workday.

The following tables' present data on CEs' dietary habits, including the percentage who consumes lunch regularly (table V), the types of meals commonly skipped (table VI), the typical time of consumption (table VII), and the usual locations where meals are taken (table VIII).

Table V LUNCH HABIT - SKIP

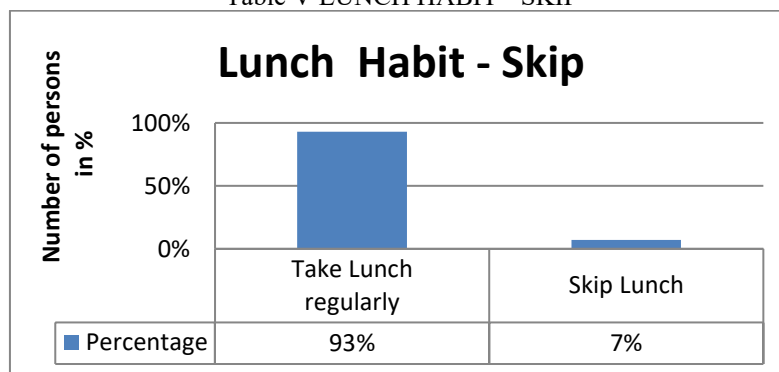


Table 6 LUNCHES - TYPE

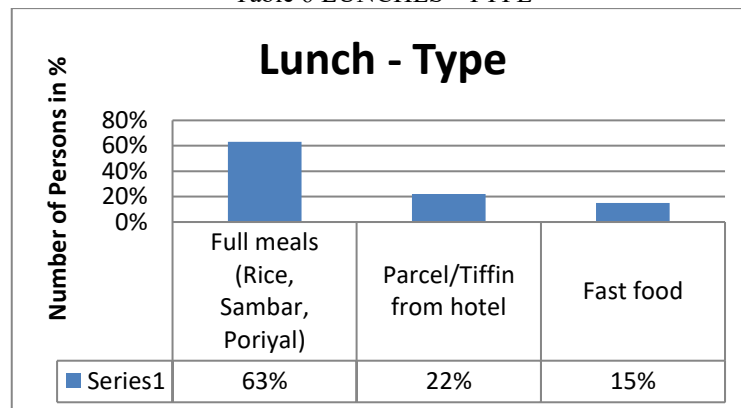


Table VII LUNCH - TIME

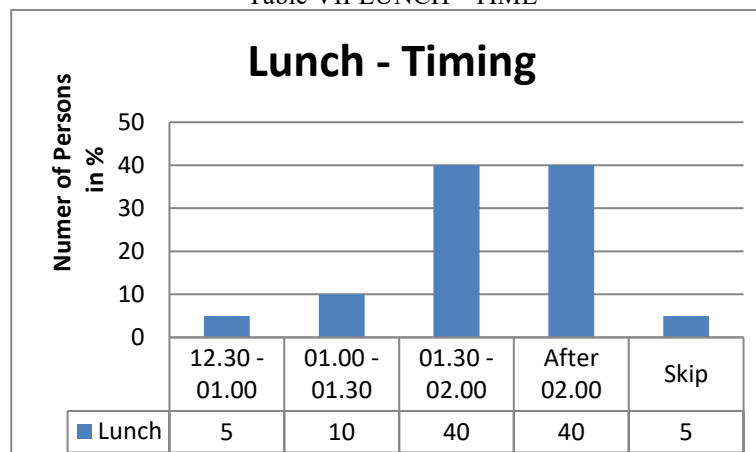
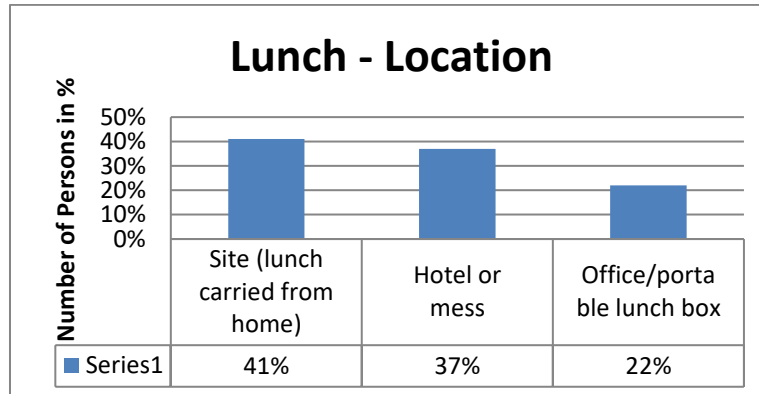


Table VIII LUNCH - LOCATION



C. Dinner Routine

Why Dinner is a Must for a PCE? Dinner is essential for CEs to recover from the day's physical and mental exertion. After spending long hours on construction sites or in demanding office environments, the body requires proper nourishment to repair tissues, replenish energy stores, and prepare for the challenges of the next day. A well-balanced dinner not only promotes restful sleep but also aids muscle recovery and strengthens the immune system — all vital for sustaining health and professional performance. In contrast, skipping dinner or consuming an unbalanced meal can compromise physical endurance, contribute to chronic fatigue, and ultimately reduce work efficiency.

Table IX DINNER HABIT - SKIP

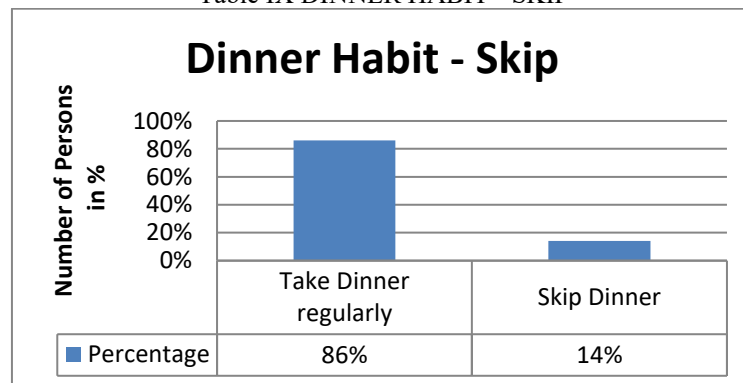


Table X DINNER - TYPE

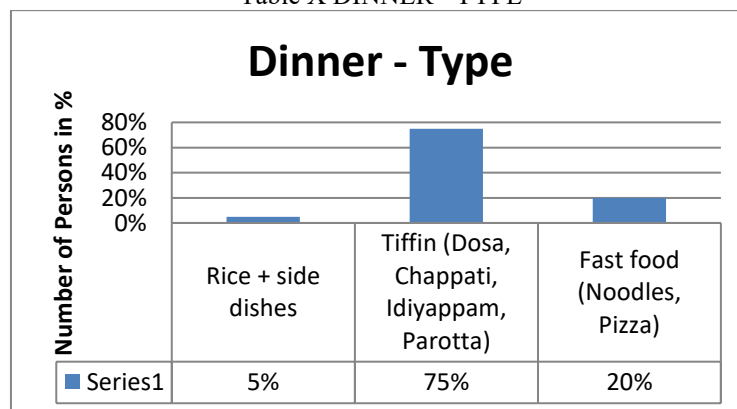


Table XI DINNER - TIME

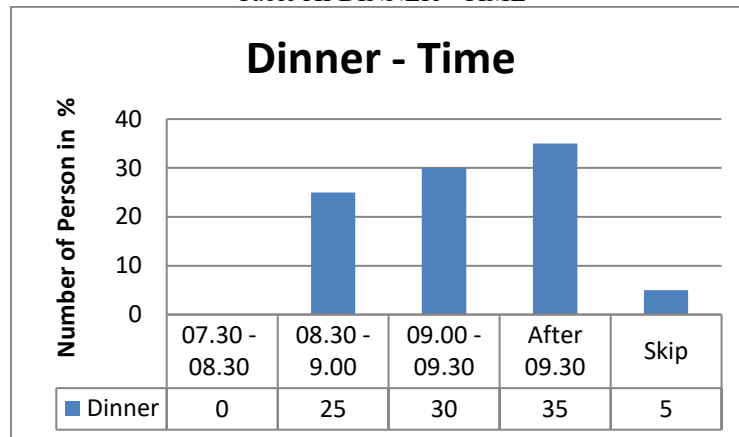
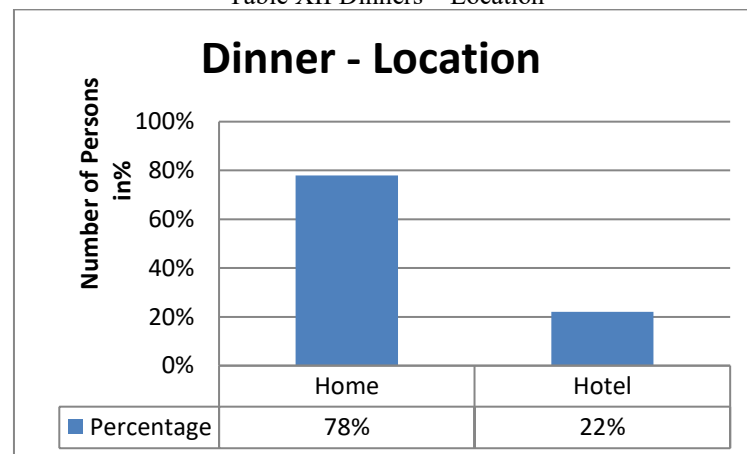


Table XII Dinners – Location



D. Frequency of Eating Out

PCEs often maintain a demanding and mobility-driven work life, characterized by extended working hours, frequent site visits, and constant travel. These occupational demands play a significant role in shaping their dietary patterns, particularly increasing the tendency to eat outside the home.

1. Influence of Work Environment and Lifestyle:

PCEs involved in construction activities are frequently deployed to remote or semi-urban project sites where access to home-cooked food is limited. Consequently, they rely on local restaurants, roadside eateries, or site-based canteens for regular meals. Even in urban settings, engineers may opt to eat out for the sake of convenience or to save time—especially during high-pressure periods such as project deadlines.

2. Frequency of Eating Out:

General observations and limited-scale surveys suggest that, the frequency of eating out among CE's can be grouped into extensive categories, depending on factors such as project location, workload intensity, and accommodation type.

Table XIII CATEGORY-WISE FREQUENCY AND CONDITION OF EATING

Condition	Engineers staying in site camps or bachelors living away from home.	Those commuting daily but preferring quick meals outside during lunch hours.	Engineers with access to home-cooked meals or office-provided food	Senior professionals or consultants who work part-time or from home.
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Frequency	Daily	3–5 times per week	Once or Twice a Week	Occasional
Category	High Frequency	Moderate Frequency	Low Frequency	Very Low Frequency

3. Common Food Preferences:

Regional staple foods such as rice varieties, parottas, Chapattis, idlis, dosas, and non-vegetarian curries are taken as. Fast food items and packaged snacks, particularly during travel are quite natural today.

Quick bites from tea stalls and Tiffin centers are mostly preferences for breakfast or evening refreshments.

4. Main Reasons for Eating Out;

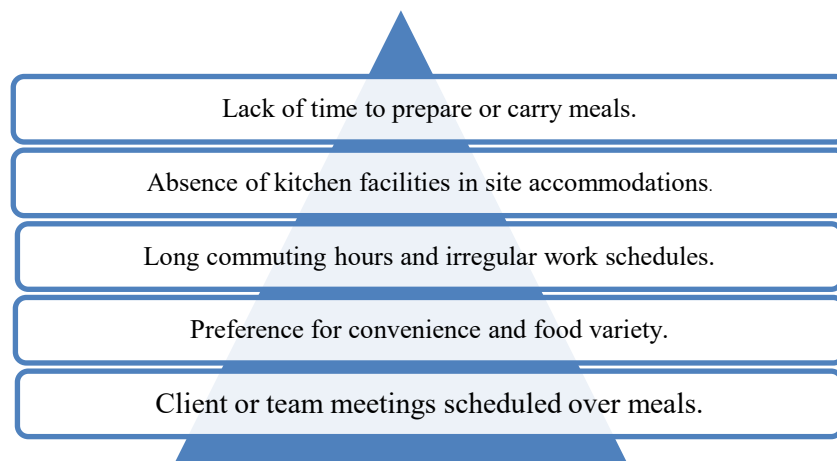


Fig. 1 Main reasons for eating out

5. Health and Financial Implications:

Health Impacts: frequent consumption of meals outside the home can lead to several adverse health outcomes, including (fig.2):

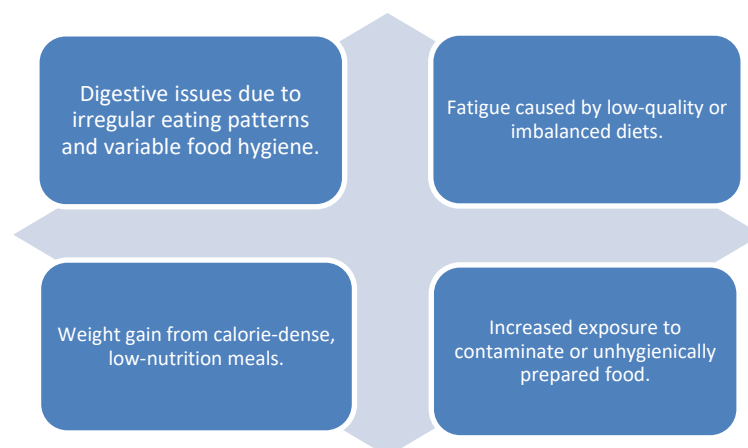


Fig. 2 Health and Financial Implications

Economic Implications: regularly dining out significantly increases monthly expenditures. This economic strain is particularly noticeable among early-career professionals, such as CEs, who often live away from family and must manage living costs independently.

E. Meals- Importance and Consequences of Skipping

Meal regularity is acting a critical role in physical and cognitive performance, especially for professions like civil engineering. Skipping meal whether breakfast, lunch, or dinner has acknowledged consequences, which go beyond mere hunger?

Table XIV Meal Type, Importance, and Consequences if skipped

Meal	Importance for Practicing Civil Engineers	What Happens If Skipped
Breakfast	Fuels the body after overnight fasting; boosts concentration, stamina, and decision-making ability. Prevents fatigue and ensures high morning productivity.	Leads to fatigue, poor concentration, irritability, and reduced morning productivity.
Lunch	Provides a mid-day energy boost; maintains alertness and reduces the risk of errors. Supports sustained physical and mental performance through the afternoon.	Causes energy crashes, low alertness, and increased chances of errors and reduced work efficiency.
Dinner	Helps in physical and mental recovery after a demanding day. Promotes tissue repair, restores energy reserves, and supports restful sleep for better performance the next day.	Results in poor recovery, weakened immunity, restless sleep, and next-day fatigue.
Overall Summary	Regular and balanced meals ensure consistent energy, focus, physical resilience, and professional output. Skipping meals can compromise work quality, safety, and long-term health.	Severe health and mental issues.

Occupational and health research highlights the detrimental effects of missing meals. Among CEs, those effects are overstated due to long working hours, physical exertion, and the need for mental alertness on-site.

Table XV Meal-Related Aspects, Relevant Statistics, and Sources

Skipped Meal	Impact	Statistics / Findings
Breakfast	Feel low energy, Cortisol level may increase, Metabolism may slow down, Experience mood swing, miss essential nutrients	Article by Carrie Madormo, RN,MPH ^[9]
Lunch	Decreased energy levels, higher error rates in tasks	“Surveys show that workers who skip lunch commonly experience lower productivity, worsened moods, and even physical discomfort in the afternoon” – Bupa and ezCater reports ^[10]
Dinner	Poor recovery, weakened immunity, disturbed sleep	Tássia do Vale Cardoso Lopes. et. al. ^[11]

Skipping meals affect more than just personal comfort. It compromises workplace safety, decision-making accuracy, and operational efficiency — all of which are critical to construction site roles and project management.

Table XVI Skipped Meal Type, Associated Impact, Supporting Statistics

Table	What It Covers	Main Idea
Regular Intake	What meals are regularly consumed (Breakfast, Lunch, and Dinner).	Tracks discipline and habits.
Time of Intake	The timing of food intake for each meal.	Shows lifestyle patterns (early eaters vs. late eaters).
How Often Skip	Frequency of meal skipping.	Indicates irregular habits and possible lifestyle stress.
Preferences	Preferred types of food (Veg., Non-Veg., Fast food, etc.).	Relates to cultural and health choices.
Reason for Skip	Reasons why meals are skipped (e.g., Work pressure, No appetite).	Gives insight into personal and professional impacts.

V. DISCUSSION, COMPARISON, AND DISTINCTION

The following structured table offers a comparative study of the topics discussed above. It highlights the relationships on dining habits, meal skipping, health, economic concerns, and job performance with a specific focus on the civil engineering profession.

Table XVII COMPARATIVE ANALYSIS –
DINING OUT vs. SKIPPED MEALS (HEALTH, ECONOMIC, AND OCCUPATIONAL IMPACT)

Comparison Point	Tables Involved	Observations
Discipline vs. Timing	Regular Intake vs. Time of Intake	Someone may regularly eat, but still eat late (not ideal health-wise).
Skipping Meals vs. Food Preferences	How Often Skip vs. Preferences	Fast food lovers might skip fewer meals (easy availability), while traditional eaters may skip when proper food isn't available.
Reasons vs. Frequency of Skipping	How Often Skip vs. Reason for Skip	High skipping linked to work pressure or lack of time — shows professional influence on diet.
Meal Preferences vs. Timing	Preferences vs. Time of Intake	Preference for heavy meals (non-veg., fast foods) might cause late-night eating.

A. Discussion of Each Table

Table XVII TABLE, WHAT & MAIN IDEA

Table	What It Covers	Main Idea
Regular Intake	What meals are regularly consumed (Breakfast, Lunch, and Dinner)	Tracks discipline and habits.
Time of Intake	The timing of food intake for each meal.	Shows lifestyle patterns (early eaters' vs. late eaters).
How Often Skip	Frequency of meal skipping.	Indicates irregular habits and possible lifestyle stress.
Preferences	Preferred types of food (Veg., Non-Veg., Fast food, etc.).	Relates to cultural and health choices.
Reason for Skip	Reasons why meals are skipped (e.g., Work pressure, No appetite).	Gives insight into personal and professional impacts.

B. Comparison across Tables

Table XVIII COMPARISON, TABLES, AND OBSERVATIONS

Comparison Point	Tables Involved	Observations
Discipline vs. Timing	Regular Intake vs. Time of Intake	Someone may regularly eat, but still eat late (not ideal health-wise).
Skipping Meals vs. Food Preferences	How Often Skip vs. Preferences	Fast food lovers might skip fewer meals (easy availability), while traditional eaters may skip when proper food isn't available.
Reasons vs. Frequency of Skipping	How Often Skip vs. Reason for Skip	High skipping linked to work pressure or lack of time — shows professional influence on diet.
Meal Preferences vs. Timing	Preferences vs. Time of Intake	Preference for heavy meals (non-veg., fast foods) might cause late-night eating.

C. Distinction between Tables

Table XIX ASPECT, TABLE DIFFERENCES

Aspect	Table Differences
Primary Focus	Regular intake checks whether you eat, time of intake checks when you eat, how often skip checks how consistently you eat.
Quantitative vs. Qualitative	Regular Intake, time of intake, and how often skip are quantitative (numbers, frequencies), while preferences and reason for skip are qualitative (choices, feelings).
Personal vs. External Factors	Preferences and regular intake are personal choices, but reason for skip often shows external pressures (work, health).
Health Indicators	Regular intake directly impact health, whereas time of intake and preferences indicate lifestyle trends more than direct health outcomes.

VI. MEAL SUGGESTED & WHY

A. Breakfast (07:00 – 08:00 a.m.)

A wholesome breakfast jump-starts the day by providing essential energy, improving mental focus, and stabilizing blood sugar levels.

1. Recommended Options:

- Whole-grain oats or muesli topped with nuts, seeds, and fruits – a fiber-rich choice that delivers sustained energy and healthy fats.
- Boiled or scrambled eggs with wheat toast – a solid source of protein and healthy fats for long-lasting satiety.
- Green smoothie with spinach, banana, yogurt, and flax seeds – packed with vitamins, fiber, and protein.
- Chia pudding served with berries and almond butter – high in omega-3s, fiber, and antioxidants.
- Idli with coconut chutney and sambar – steamed, light, and protein-rich, keeping digestion smooth and energy levels steady.
- Dosa (regular or ragi dosa) with chutney and sambar – a wholesome blend of carbohydrates and plant-based proteins.
- Upma (made with semolina or millets) with vegetables – filling, easy to digest, and loaded with fiber, vitamins, and minerals.
- Pongal (ven pongal) with coconut chutney or sambar – comforting, protein-packed, and energizing.
- Appam with vegetable stew – soft, fermented, and gut-friendly, paired with a light nutrient-rich curry.

2. Why It Matters:

- Supplies key macronutrients: carbohydrates, protein, and fats.
- Supports high energy levels essential for physically demanding civil engineering tasks.
- Enhances focus and mental clarity for long planning and problem-solving sessions.

B. Lunch (12:30 – 1:30 p.m.)

Lunch should be well-balanced and satisfying, yet light enough to prevent post-meal fatigue. The goal is to refuel the body while maintaining alertness.

1. Recommended Options:

- Grilled chicken or fish with quinoa salad – rich in lean protein and dietary fiber.
- Lentil curry with brown rice or whole wheat chapatti – excellent for plant-based protein and complex carbohydrates.
- Vegetable stir-fry with tofu or paneer and a side of whole-grain rice/noodles – provides protein, fiber, and essential micronutrients.
- Chickpea salad with spinach, cucumber, tomatoes, and olive oil – high in fiber and healthy fats.
- Sambar with steamed rice, served with poriyal (stir-fried vegetables) – a traditional South Indian option rich in protein, fiber, and antioxidants.
- Curd rice with pickles and a side of vegetable kootu – cooling, probiotic-rich, and keeps energy levels stable.
- Vegetable biryani (made with millets or brown rice) with onion raita – flavorful, wholesome, and provides complex carbs with probiotics.
- Adai (mixed lentil dosa) with aviyal (mixed vegetable curry in coconut base) – protein-packed and nutrient-dense.

2. Why It Matters:

- Combines complex carbohydrates, lean proteins, and fiber for steady energy.
- Prevents afternoon energy crashes often caused by sugary or heavy meals.
- Light, nutrient-dense meals enhance alertness and productivity.

C. Dinner (07:00 – 08:00 p.m.)

Dinner should be lighter in quantity but rich in nutrients to facilitate the body's recovery from the day's physical exertion.

1. Recommended Options:

- Grilled or baked fish with steamed vegetables (e.g., broccoli, zucchini) – high in omega-3s, protein, and vitamins.
- Vegetable soup with wheat toast – easy to digest, yet full of nutrients & fiber.
- Quinoa bowl with grilled vegetables, chickpeas, and avocado – a satisfying blend of fiber and healthy fats.
- Chicken stew with sweet potatoes or roasted vegetables – comforting and nutrient-rich, offering protein and complex carbohydrates.
- Idli with vegetable sambar and chutney – light, steamed, and gut-friendly, providing protein and fiber.
- Rasam with red rice or millets (like varagu/kuthiraivali) – a soothing, antioxidant-rich option that aids digestion.
- Vegetable upma with coconut chutney – wholesome and easy to digest, offering carbohydrates, vitamins, and minerals.
- Curd rice with tempered curry leaves and a side of vegetable poriyal – cooling, probiotic-rich, and gentle on the stomach.

2. Why It Matters:

- Aids muscle repair and recovery after a strenuous day.
- Encourages healthy digestion and prevents heaviness before bedtime.
- Supports quality sleep by avoiding overly heavy meals.

D. General Dietary Tips for Civil Engineers

- Stay Hydrated: Aim for at least 8 cups of water daily. Include options like coconut water or lemon-infused water for variety and refreshment.
- Smart Snacking: Choose nutrient-rich snacks such as fruits, nuts, or yogurt to maintain energy between meals.
- Consistent Meal Timing: Eating every 4–5 hours helps sustain energy and concentration throughout the workday.

VII. CONCLUSION

For a PCE, who might have a physically demanding and mentally challenging work schedule, maintaining balanced nutrition throughout the day is essential. Keeping a schedule in routine helps maintain optimal energy levels, ensuring that physical tasks and mental focus can be sustained during long hours on site or in the office. For a practicing civil engineer, maintaining a regular pattern of breakfast, lunch, and dinner is not just a personal health choice but a

professional necessity. Each meal plays a vital role in sustaining energy, enhancing focus, supporting physical stamina, and promoting recovery. Skipping any meal can disrupt performance, increase the risk of errors, and affect long-term health, ultimately impacting the quality and safety of engineering work. A balanced diet, spread across these three essential meals, forms the foundation for a successful and enduring career in civil engineering. Though most engineers do have regular meals, time constraints and site-based demands are pushing them toward hotel-based food and fast options. A balance between accessibility and nutrition is essential to ensure long-term health, productivity, and job satisfaction among civil engineers.

- Consistency in meal intake correlates positively with better water intake and fewer health complaints.
- Work pressure and stress directly cause irregularity (both skipping and late eating).
- Meal preference affects meal timing and meal regularity; fast food eaters may be more casual in their intake.
- Skipping meals often relates not to lack of food but to time management and work culture.

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