CHAPTER-2

Literature Review

Unraveling the Sonic Tapestry of Diner Experiences

This chapter includes the review of the existing literature within the scope of the topic. This chapter offers the reader with a quick overview of the previous studies, research thesis, and industry reports made within the fields of restaurant soundscape and diners' experiences.

"Picture may be worth a thousand words, but a soundscape is worth a thousand pictures." – Bernie Krause, Soundscape Ecologist

2.1. Introduction

Through a number of reviews of the literature, this chapter explored the significance of many factors pivotal for understanding the impact of soundscape in diners' experience. A thorough survey of the literature covering different eras, geographies and settings has been done for the study. Previous research acts as a baseline for present and upcoming studies, and the aspects that were studied and those that were overlooked in the past have a big influence on the studies and their implications for the impact on academic and industry research.

In this study, the initial phase in the literature review process has been the scanning of multiple databases, including Shodhganga, Google Scholar, Web of Science and Scopus for earlier publications on soundscape and related topics. All relevant journals have been considered, examined, and qualified articles have been compiled. In order to find the most closely related publications, the search terms "Soundscape", "Auditory Cues", "Aural", and "Service Marketing" are used in the beginning of the review procedure for the study. Various facets of soundscape research across nations are examined. Since the study focuses on how diners experience the soundscape, the soundscape in restaurant setting is thought to be the foundation for the study. Moreover, soundscape has a close relationship with sensory marketing, so the review additionally highlights this idea in the beginning to create a base. The two fundamental components of soundscape, namely, music and noise, have been explored separately in both in Indian and international contexts. Finally, the research gaps are identified successfully.

2.2. Sensory Marketing

Marketers, especially advertisers, have relied on Sensory Marketing (SM) because of its substantial effect on consumer behaviour. The ways in which business houses are conceptualizing the idea of senses are definitely an extension of the idea that senses have played a dominant role in various fields from the ancient time. The five senses, also known as the *indriyas* in Sanskrit, or sense organs, are specifically highlighted in the scriptures of Hindu religion. The concept of senses has been mentioned in all ancient

writings and scriptures, across nations, civilizations, and religions (Mamidi & Gupta, 2018). Buddhism also emphasizes the strength of five senses as termed as - *dbang po* (Holba, 2019). The senses have been mentioned extensively in literature from ancient civilizations, including the Maya civilization and the ancient Greek civilization, as a means of connection with the outside world (Houston & Taube, 2000). Marx had also developed the idea of the "Human Sense" in his writings, emphasizing the multisensorial element while integrating all five senses (Mamidi & Gupta, 2018).

In the beginning of the 1990s, the marketing experts began the use of different senses to make an effect on the responses of the audiences. Around that time, the incorporation of the five senses had started to gain worldwide recognition. Aradhna Krishna (2009), a professor in the marketing department at the University of Michigan's Ross School of Business in the United States defined the term ‘sensory marketing’ as "marketing that engages the consumers' senses and affects their behaviour." Since then, in marketing research, divergent studies on the role of senses in consumer behaviour have been gathered and placed under the umbrella of sensory marketing (Krishna, 2012; Krishna, 2013; Hultén, 2011).

From managerial perspective, sensory marketing can be applied to establish subliminal cues that characterize consumers' opinions on intangible aspects of the product (such as its sophistication, quality, elegance, innovativeness, modernity, and interactivity. The perceived quality of an abstract attribute, such as its taste, colour, shape, or smell, can also be influenced by it. A company's relationship with its customers is shaped by the sensory elements (taste, touch, smell, sound, or image) of its products and services and how they interact with customers to create a wholesome customer experience (Ifeanyichukwu & Peter, 2018).

Hulten (2011) proposes that a multi-sensory brand experience uses the five senses to create consumer value, experiences, and brand image. It also helps customers build individual value by describing their reactions when a firm interacts with them and supports their purchase and consumption processes. The primary objective of sensory marketing is to induce emotions in consumers that go beyond the product's obvious features. By doing so, the brand becomes more recognizable and which might result in more loyal consumers (Lindstrom, 2005). Using all five senses, sensory marketing aims to provide customers with a pleasurable experience that makes them delighted before,

during, and after making a purchase. Furthermore, it emphasizes on brand recognition and how this phenomenon can address emerging marketing problems (Hulten et al., 2009). Marketers use human psychology as a tactic to sell their products or services by creating an environment that stimulates human senses at the time of sale (Barros & Alves, 2004). The term "atmospherics" coined by Kotler (1973) refers to a broad category of phenomena that includes the way a store is designed, its interior, the arrangement of its aisles, the texture of its walls and carpets, the smells, colours, and forms of its items, as well as the displays, mannequin poses, and sound that customers are exposed to (Mutize et.al., 2021; Raju et.al., 2023). As stated by Kotler (1973), the environment filled with multi-sensory cues of visual, aural, olfactory, and tactile factors plays a very important role in shaping extraordinary sensory experiences to consumers. In case of services, being intangible in nature, during the delivery of the service the use of physical evidence and experiential elements are dominant. Berman & Evans (2013) conclude that various elements like colour, lighting, fixtures, temperature, merchandise, cleanliness, and sound (including music) affect customer's perception about the product. Sliburytė & Le Ny (2017) is of the opinion that atmospherics comprises of the following elements: visual (colour, lighting); olfactory (scent); tactile (temperature); taste (taste sensations); and aural (volume, pitch, tempo). Physical surrounds refer to the tangible, spatial, and physical elements of the environment that surround a consumer action. Geographical location, store size and layout, interior design, music, smells, lighting, weather, and the visible arrangement of merchandise, crowds, employees, services, and the spatial arrangement of people or items are all factors that might affect how customers behave. Consumer perceptions are influenced by the physical environment through their senses of touch, hearing, smell, and vision. The physical environment shapes the consumer's attitudes, beliefs, and behaviours in the way that is anticipated. In creating a store's image, the physical environment plays a significant role in addition to a well-known situational influence. Darden, Erdem, & Darden (1983) explore that views regarding the store atmosphere can occasionally be more crucial in deciding which store to visit. Retail spaces can have both functional and aesthetic values while communicating a variety of cues to their patrons (Fiore et al., 2000). The store environment in any retail setting is pivotal in the decision-making process of the consumer. The importance of the store atmosphere in the scholarly articles can be traced back till 1950 (Martineau, 1958; Cox, 1964). According to Kent (2007) the use of music, smells, textures, and lighting produces a special micro experience in a conventional retail setting. Customers are

greatly influenced by all of these sensory aspects of the store. Their ability to give customers a more enjoyable and better shopping experience affects their purchasing decisions in brick-and-mortar establishments. According to Soars, (2009) also customers will have a better purchasing experience in a store with greater sensory appeal. Customers want sensory enjoyment in practically every purchase they make, regardless of the goods or services they are purchasing. Consumers, including those in the food service business, place a high value on the hedonic advantages of foods and seek out specific features that engage their senses and provide the most pleasurable experience (Krishna, 2012). Products are not only restricted to providing utilitarian benefits, but rather symbol of a bigger construct known as the consumer experience, which is memorable, customizable, long-lasting, and filled with a variety of experiences and sensations (Farias et al., 2014). Although, the primary component of a restaurant is the food, the diner's total experience is greatly influenced by the atmosphere in which the meal is consumed (Ryn & Jang, 2007). To put it another way, customers want a 'dining experience' that combines superb cuisine, rapid service, a pleasant ambiance, and entertainment in the service environment. That way restaurant is a place where beautiful memories are created and experiences take place (Markovic et al., 2010).

After going through the different literature in sensory marketing, initiatives have been taken to showcase the importance of individual senses as discussed in marketing research literature.

2.2.1. Vision/Sight

Vision is one of the most potent senses as the connection between eyes and brain occurs very quickly: it takes approximately 45 milliseconds for human to detect a visual object (Hecht & Reiner, 2009; Kumar, 2014; Ifeanyichukwu & Peter, 2018). A store's design, colour, lighting, and layout all work together to draw the attention of the customers in and establish a certain mood and visual identity. Visual stimuli such as logos, colours, packaging, and product design can be incorporated into any brand strategy (Hulten, 2013). Customers are affected by colour, and elicit several responses in them (Farias et al. 2014), including biological, psychological, and drawing attention towards an object. Important elements like logos, packaging, colour, design, and appealing shapes can be used strategically to create and reinforce the desired perception of a product in the eyes of consumers (Hulten et al., 2009). Seeing, which comes most naturally to humans, is

essential to all living things, including birds, insects, and mammals. Since the word "I see" implies "I understand," it is essential that sight corresponds to understanding in human communication (Bhatia et al.,2021).

2.2.2. Smell/ Olfactory

Newborns identify their breastfeeding mothers by their scent because their sense of smell is the first and most developed sense following birth (Yeshurun & Sobel, 2010). But unlike animals, mature people lose some of their sense of smell as their other senses develop, making them less sensitive to smell. The sense of smell has been the subject of recent research due to its remarkable ability to elicit emotions (Bordegoni et al., 2019). According to Herz (2004), scent and smell-related memories were shown to be more emotionally charged than those evoked by the other senses. Researchers have found that pleasant smells can increase consumers' evaluations of both the products and the stores, as well as create deep links with memories and enhance the product's evaluation. Starting with the use of fragrance in services marketing (Goldkuhl & Styvén, 2007), moving from ambient scent to product scent (Krishna et al., 2010), ethical considerations when using scent as a marketing tool (Bradford & Desrochers, 2009), and utilising scent's ability to evoke memories about brands and products (De Luca & Botelho, 2020). The research on smell in consumption environments and its ability to identify practices is being done in the study by Canniford et al., 2018. According to a study by Cerulo, 2018, customers are able to comprehend the messages and products linked to particular fragrances, even though their interpretation and decoding are influenced by socio-cultural elements.

2.2.3. Taste/ Gustative

This sense is very peculiar in nature, as this can only be experienced in the case of food products. When discussing our life experiences, food is the subject that comes up most frequently. In fact, we always like to discuss our experiences with others about what we have eaten, even after returning from vacation (Elder & Krishna, 2010). For human survival, social interaction, physical well-being, and even emotional health, food and taste perception play a critical role in one’s life. Consuming food and beverages are linked to contentment and good recollections, which emphasizes that marketers shouldn't undervalue flavour. Additionally, adding flavour or providing food or drink in a business raises the perceived value and benefits for customers, helping them to positively

distinguish the brand in their minds (Gobé, 2001). Elder and Krishna (2010) demonstrate how advertisements that highlight different senses—such as taste, touch, and smell—affect taste perception more favourably than those that just highlight taste. The five different human senses cooperate to produce taste, which is the outcome of the activity of taste buds on the tongue, esophagus, cheek and roof of the mouth (Drummond & Brefere, 2010). Food taste will allow consumers to evaluate each food item (O'Mahony et al., 2007), determine whether it is suitable for consumption (Melda et al., 2020), distinguish a particular food from similar products, and eventually become an attribute of a food product (Siregar, et al., 2022). According to Chen et al. (2023), a food product's scent, flavour, and maturity level can all be used to define its taste. This factor plays a major influence in determining how well-liked and satisfying a product is by consumers. Taste has a positive and significant impact on customer satisfaction (Ashari et al., 2023).

2.2.4. Touch/ Haptic

The first sense to develop in a mother's womb is touch and deteriorates the least with age (Ifeanyichukwu & Peter, 2018). For those who are blind, touch is also the most significant sense. With a highly developed sense of haptics, a word that describes the "active seeking and perception by the hands" (Peck, 2010) are able to gather information and perceive their surroundings clearly. This idea of using touch to learn more about a product could be used in point-of-purchase displays and marketing. Customers' behaviour and attitude towards purchasing are positively impacted by handling the merchandise (Peck & Wiggens, 2006; Pantoja, Borges, Rossi, & Yamim, 2020). According to Peck and Wiggins (2006), touching touch-screen electronics may inspire customers to engage with the products. A possible reason might be the fact that judging things like computers or mobile phones requires more than just the eye (Hulten, 2013). According to Hulten's (2013) research, customers' attention is influenced by the use of visual and auditory sensory cues, and their purchasing behaviour is positively correlated with handling the objects. Peck and Childers (2003) assert that touching a thing is the only way to determine if it is worthwhile to purchase. They developed the Need-for-Touch scale, which identifies variations in touch reactivity between people. It consists of two subscales: the autotelic and the instrumental. Ringler et al. (2019) assert that haptic blocking is a technique that prevents customers from touching things on display won't negatively impact store sales. This provides an intriguing perspective on touch, which

has long been explored in relation to the idea that satisfying one's demand for touch increases the likelihood of making a purchase. A few recent studies investigate how using the sense of touch is affected by technology advancements in shopping. When compared to buying using a mouse on other devices, the introduction of online shopping and the use of i-pads and touchpads are expected to positively influence the purchase intention of the online shopper (Rathee & Rajain, 2019; Zhu & Meyer, 2017).

2.2.5. Sound/ Auditory

Human ears are exposed constantly to a vivid cacophony of auditory information. According to Lowe et al. (2019), hearing is an extremely sensitive involuntary sense that is fundamental to most creatures. Since people naturally hear things without realising it, this sense is frequently used to enhance their entire sensory experience. Marketers have been successful in stimulating our subconscious and influencing our thoughts, opinions, and behaviours through a variety of means, such as the jingle of a radio station (Meyers-Levy et al., 2011). Marketers can influence consumer behaviour by using sound to push individuals through decision-making processes or alter their perceptions of the products or services that are being offered to them (Hartmoyer, 2022).

Various studies have demonstrated how background music influences the emotion, flavour of the goods, with wine and related food items receiving particular attention (Biswas, Lund, & Szocs, 2018; Reinoso-Carvalho et al., 2020; Spence et al., 2019; Kellaris, 2008). In fact, this important change in mood takes place in the brain (Karapetsas & Kantas, 1991). More particularly, exposure and listening to music causes the release of a number of neurotransmitters such as norepinephrine and epinephrine as well as serotonin, dopamine, leptin and oxytocin which, when acting in combination, affects and regulates mood (Yamasaki et al., 2012; Cheng, 2013; Chanda & Levitin, 2013). A person can relax, experience significant emotional experience, and have their emotions enhanced or altered by music (Juslin & Laukka, 2004; Karapetsas et al., 2015). Researchers suggested that people use their emotions to govern their decisions (Damasio, 1994), actions (Larsen, et al., 2002), subjective well-being (Frijda, 1999), and level of satisfaction (Wirtz et al., 2000). Therefore, it can be said that listening to music is a useful tool for improving and regulating mood (North et al., 2000), as well as a way to relax and reduce stress (Saarikallio & Erkkila, 2007). Additionally, people irrespective of age, can utilise music to comprehend their emotions and control their behaviour

(Davidson et al., 2008). Furthermore, the beneficial effects of music have been demonstrated in situations where individuals might not be able to communicate their feelings through other channels (Hargreaves & North, 1999).

2.2.5.1. Sound Mechanism and Sound Psychology

It is logical to identify the components or phases that are pertinent to the entire process from the production of sound to it being perceived by people. From the perspective of physics and biology the process consists of elements like source of emission, medium of transmission and the receptor or receiver. Sound waves are the medium via which auditory information is transmitted to the brain. According to the National Institute on Deafness and Other Communication Disorders (2022), as the sound waves pass through the atmosphere, the brain processes sound waves by converting them into electrical signals. After entering the outer ear, sound waves proceed through the ear canal and strike the eardrum, which vibrates as a result of the sound waves. When the ripples generate waves on the basilar membrane, coated in hair cells that move, allow open tiny channels, and release chemicals that result in electrical signals. Action potentials are fired by brain axons, resulting in electrical signals that are sent to the auditory cortex for processing. The auditory cortex is located within the temporal lobe, on the superior temporal gyrus. According to Purves & Williams (2001), the auditory cortex is in charge of receiving sound impulses and translating the auditory information into sounds that humans can comprehend. After the brain detects sound, it may start to interpret the sound and choose the proper reaction. Using fMRI scans of the participants' brains, Aubé et al. (2015) investigated the emotional responses of the subjects to visual and auditory stimuli. They were able to assess how "aroused" various brain regions were in reaction to music and visual images using the MRIs. The prefrontal cortex, which governs behaviour and decision-making, and the anterior cingulate cortex, which is linked to emotion and impulse control, are both impacted by emotions. These structures play a major role in emotional regulation and have a big impact on how people react to and perceive emotional cues (Ochsner & Gross, 2008). A phenomenon called as sound symbolism where the auditory elements associated with a product such as its brand name, jingles, or other sounds—can influence consumer perception. Even words that don't immediately make sense have a purpose and a symbolic significance. According to Spence & Gallace (2011), "kiki" is associated with jagged shapes, high-pitched tones,

and sour tastes, while "bouba" and "maluma" are associated with round shapes, low-pitched sounds, and sweet tastes. People consider "Frosh" ice cream to be creamier than "Frish" ice cream (Yorkston & Menon, 2004). Similar to this, a product may appear more enticing when specific noises associated with food are heard. For instance, because the brain is activated when a particular crunch sound is heard, customers may believe that chips taste better and are of higher quality (Krishna, 2012). Music is referred to as the language of emotion by Cohrdes, Wrzus, Wald-Fuhrmann, and Riediger (2020) because it has the ability to affect emotional states. Regarding packaging, a beverage's opening sound provides information regarding the freshness and safety of the beverage (Spence & Wang, 2015a). A beverage's pouring sound can serve as a temperature indicator, allowing customers to determine whether a beverage is hot or cold based just on the sound (Velasco et al., 2013). The sound that the liquid makes as it moves can be used to estimate the thickness of a beverage as it is being poured (Parthasarathy & Chhapgar, 1955). Additionally, it's recommended that bottles can be made to make specific noises in order to improve consumers' sensory expectations for brands and beverages (Spence & Wang, 2015b).

That way in acoustics, a sound is a mechanical wave that results from an object moving or vibrating in a solid, liquid, or gaseous medium. A longitudinal sound wave in air moves forward and backward and affects the air pressure. In the course of the wave, air particles are crushed together (known as condensation) or pulled apart (known as rarefaction) (Rossing et al., 2014). Amplitude and frequency are the two primary properties of a basic sinusoidal or sine sound wave. The amplitude is the magnitude of the pressure change, which is commonly represented as the Sound Pressure Level (SPL) in decibels (dB) on a logarithmic scale. The frequency of the sound, usually represented in Hertz (Hz), is the number of times per second the pressure repeats itself. Loudness is a perceptual experience that is correlated with amplitude. Loudness is described as "that attribute of auditory sensation in terms of which sounds may be ordered on a scale extending from soft to loud". The frequency range that humans are most sensitive to is between 0.5 and 5 kHz (Moore, 2004). Different frequencies with equal SPLs are perceived by the hearing system as varying degrees of loudness. higher SPLs are required for frequencies at the lower and upper ends of the frequency range to be audible; for example, a 20 Hz tone at 40 dB would be perceived as quieter than a tone at 1 kHz at 40 dB. Equal loudness contours illustrate the amount of compensation required

by the hearing system to perceive sounds with varying frequencies as having the same loudness (Rådsten-Ekman, 2015). Pitch discrimination between tones is achievable due to the ear's high frequency resolution. Pitch is defined as "that attribute of auditory sensation in terms of which sounds may be ordered on a scale extending from low to high" (ANSI/ASA, 1994). Pitch fluctuations can be perceived as a sense of melody. Additionally, the auditory system delivers information about the distance to the source of the sound (Moore, 2004; Zahorik, 2002).

In order to forecast the perceived auditory quality of products, such as the sounds of electric household appliances and inside car interiors and the like, psychoacoustic measures of sound character, or sound quality, have been established. Psychoacoustics is related to the relationships between the physical characteristics of sounds and their perceptual attributes. Here are some of the measures of sound quality.

Loudness: The level of psychological perception of sound in the hearing is described by the loudness. According to Zwicker's (1956) loudness model, which considers the ear's varying sensitivity at various frequencies, loudness can be anticipated. Zwicker's (1956) loudness model is usually the foundation for these measurements. It is significant to note that the direction of the source, bandwidth, frequency content, and temporal features of the signal all affect how loudness is perceived (Ewins, 2000). Only low levels and narrow bandwidth sounds, or sinusoidal signals, can be approximated in terms of loudness using the SPL (dBA) (Volandri et al., 2012).

Sharpness: The auditory experience associated with the sound's spectral correlation is represented by the sharpness. Although it is a component of timbre perception, sharpness (S) is frequently evaluated independently. Rather than the intricate spectrum structure, it is more closely related to the spectral envelope and the central frequency of narrow-band sounds. Sharpness for narrow-band noises rises as centre frequency does (Zwicker & Fastl, 2007). Specifically, sharpness grows nearly in proportion to the critical band rate at low centre frequencies, whereas sharpness increases faster than the critical-band rate at high frequencies. As can be seen by looking at the sharpness of band-pass noise, which is a function of lower and higher cut-off frequency, sharpness is greatly reliant on bandwidth. Notably, adding sound components at lower frequencies surprisingly reduces sharpness, while introducing noise at higher frequencies boosts it. Bismarck and Aures

introduced the calculation model for measuring sharpness (Bismarck, 1974; Aures, 1985b)

Roughness: When it comes to the sound with a frequency between 20 and 200 Hz, the roughness represents the auditory perception characteristic linked to the frequency modulation, amplitude modulation, and sound intensity. Aures introduced a model to calculate the roughness (Aures, 1985a).

Fluctuation Strength: The fluctuation strength, which represents the relief intensity of loudness for the subjective experience of ears, is appropriate for the evaluation of sound signal for low-frequency modulation below 20 Hz. Fastl and Zwicker proposed the fluctuation strength calculation model (Zwicker & Fastl, 2007).

2.3: Soundscape

The sound is perceived differently by different individuals. Because of the various ways that sound interacts with our surroundings—whether in a concert, an amusement park, or a forest; and so on and so forth it is difficult to say about our sonic perception. Sound is a challenging issue. As sound radiates from its source, the materials (surfaces, objects or our bodies) it touches alter its direction and quality, giving us information about the source and the surroundings. This implies that even minute adjustments to our posture, like turning our heads a little, can have a significant impact on how we perceive a sound source and its quality. A concept called soundscape has been widely used in different scientific contexts during the last decades (Kang & Aletta, 2018; Grinfeder et al., 2022). The Canadian composer and naturalist R. Murray Schafer had carried out considerable number of original works to advance research in the field of soundscape by taking reference from the term originally used and the scientific article written by the Michael Southworth (1969) in the field of architecture, city planning, urban planning and design (Axelsson, 2020; Southworth,1969). Southworth (1969) first developed the notion of soundscape while researching how people perceive their urban surroundings (Sterne 2015; von Fischer and Touloumi 2018; Radicchi 2019). After Schafer made the term popular, researchers from different fields presented multi-dimensional classification for soundscape.

2.3.1: Meaning and Definitions of Soundscape

The term is formed of the words "sound" and the etyma "-scape." It means the scenery of hearing, alike to the traditional meaning of "landscape," which is the scenery of sight. That is, sound worthy of being appreciated and remembered in a natural or man-made setting via the lens of culture and aesthetics (Ge & Hokao, 2005). In contrast to the conventional approach to design in architecture and landscape, soundscape considers "sound" to be an additional key design element. An environment that is more comprehensive and harmonious can result from the plan and design of its acoustic environment. Through the five senses, people are aware of their surroundings. The "visual supremacy" approach to landscape design has traditionally been prevalent, with little regard for other sensory aspects. However, hearing is a valuable way to experience the landscape as well as a means of accessing information from the perspective of environmental acoustics (Ge et al., 2013). The concept of soundscape emphasizes comprehending and understanding the total sonic environment (Truax, 1999). In traditional environmental noise management, significant attempts have been made to lower sound levels. However, it is gradually becoming apparent that this does not always result in improved acoustic comfort (Kang 2006). In the past few years, soundscape has received a lot of attention as a more constructive approach of addressing the issue of environmental noise pollution (Yang, 2013).

There is no universally accepted or single definition for soundscape (Cain et al. 2013). A soundscape can be defined as "the whole acoustic environment" by Schafer (1977) or as "an environment of sound where the emphasis is on how the sound is perceived and understood by an individual or by a society" by Truax (1999). According to Thompson (2002), a soundscape is an aural or auditory landscape. Similar to a landscape, a soundscape is both a physical setting and a means of experiencing it (Davies et al. 2007). Pijanowski et al. (2011) described the soundscape as, "the collection of biological, geophysical, and anthropogenic sounds that emanate from a landscape and which vary over space and time reflecting important ecosystem processes and human activities". According to Barchiesi et al. (2015), the soundscape is the term used to describe the sound that the environment produces and is comparable to the "acoustic scene." When it comes to categorising acoustic scenes, the scene differs from Pijanowski's holistic soundscape in favour of describing the sounds that are perceived by the audience.

Further, Celis-Murillo et al. (2009) proposed that a 360° display is an accurate representation of the soundscape and that a recording contained all the information encoded in the soundscape. Soundscape's composition frequently involves the notion that the soundscape and its recording are 'one and the same'. Westerkamp (2002) defined soundscape from a different angle as the outcome of the juxtaposition of sound recordings of the environment that gives an "artistic, sonic transmission of meanings about place, time, environment and listening perception". The "meaning" that people attach to sounds has taken the role of the ecological origin of sounds, which Pijanowski's definition emphasises, in soundscape composition. Later on, Payne et al. (2009), who combined the objective and subjective aspects of soundscape into their own definition and presented as- "soundscapes are the totality of all sounds within a location with an emphasis in the relationship between individual or society's perception of, understanding of, and interaction with the sonic environment". As stated by Grinfeder et al. (2022), the agreement and argument of the ideas and thoughts has led to the emergence of three distinct soundscape categories: the distal soundscape, the proximal soundscape and the perceptual soundscape. The spatial and temporal distribution of sounds inside a predetermined area in relation to sound propagation effects is known as the distal soundscape. The proximate soundscape is the collection of sound signals that propagate at a certain location in space. The subjective interpretation of a proximal soundscape by a person is known as the perceptual soundscape. However, McGregor et al. (2006) stated that the classification of soundscapes could take many different forms, but the most popular ones are based on speech and non-speech, or speech, music, and other. Different techniques, which could be divided into psychoacoustics, semantics, aesthetics, and environmental categories, have been created to categorize sound events within soundscapes or even entire auditory environments.

A major development in the field of soundscape took place in 2008. International Standard Organization established a working group ISO/TC 43/SC1/WG 54 "Perceptual assessment of soundscape quality" to bring in consistency and compatibility between theoretical and methodological approaches of soundscape studies and practice, by developing the definition, as given in ISO 12913-1, Section 2.3:"Soundscape is an acoustic environment as perceived or experienced and/or understood by a person or people, in context" (ISO, 2014). There are differing views on the definition and goals of the soundscape field because it evolved differently globally and between disciplines. The

term "soundscape" has consequently become vague and peculiar. In order to facilitate communication across disciplines and professions with an interest in soundscape, the International Standard ISO/DIS 12913-1 (2013) seeks to establish a broad international consensus on the definition of "soundscape" (Brown et al., 2011). Since then, soundscape is being understood as a perceptual construct (soundscape) that is related to a physical phenomenon (acoustic environment). There is a paradigm shift in the soundscape research as it firstly counts on human sciences and social sciences (medicine, anthropology, architecture, psychology, sociology) and then on physics, but also takes into account the diversity of soundscapes across countries and among different cultures (Brooks et al., 2014).

2.3.2. Classification of Sound Components and Sound Sources

The main components of soundscape, as classified by Schafer (1977) comprises the keynote sounds, sound signals and soundmarks. Similar to a piece of music, a keynote identifies the basic tonality of a composition in which the music modulates around. The purpose of foreground sounds, often known as signals, is to draw attention of the visitors. Soundmarks are, like landmarks of a particular space. In other words, soundmarks are sounds that are especially valued by a community and its visitors. The classification of sound identified by Schafer is most notable for treating all sounds equally throughout the universe.

Krause identified three active sources of soundscape present in the environment with wide spectrum of sounds: biophony (organic but non-human sources), geophony (non-organic elements of nature) and anthrophony (all environmental sounds generated by human sources). Individuals encounter these sources independently or intrinsically by making various combinations out of these sources (Krause, 2008).

Biçer (2019) mentioned that it is necessary to address the dual diversity of audio components in order to uncover the underappreciated sonic potential in an urban setting. On the one hand, the acoustics-related sound environment can be heard in relation to its physical characteristics. Psychoacoustics relates to the ability to perceive the auditory environment in relation to its cognitive qualities. This leads to instrumental acoustic and psychoacoustic experiences since the sound has both tangible and intangible aspects. Both physically and perceptually, the integrity of sound in daily life should be addressed.

Sound can be classified in three categories: physical properties, semantic properties and aesthetic qualities (Schafer, 1977). The Art of Mixing states that time, frequency, and volume (or amplitude) is the fundamental physical elements of sound (Gibson, 1997). This concept applies to Schafer's four-property theory as - Schafer's first property which is duration that deals with time; secondly frequency, which is present in both the theories; and the third and fourth are based on volume and time respectively. The purpose and meaning of sounds are referred to as their semantic characteristics. The aesthetic classification of soundscapes is subjective in nature. People's personal experiences, work surroundings, and regional background can all have an impact on how they perceive sounds. This can be made clear with the help of an example of two different sounds:(i) Car horn and (ii) Bird song.

Table 2.1: Example on sound derived from Schafer, 1977

Sound Source/ Classification	***Physical Property***	***Semantic Property***	***Aesthetic Property***
Car Horn Blowing	*90 dB (SPL), ≈500 Hz (Frequency)*	*"Get out of my way!"* *"I've just married!"*	*Annoying, Unpleasant, Exciting*
Bird Singing	*60 dB (SPL), ≈ 5k Hz (Frequency)*	*Clear day, morning*	*Pleasant, beautiful, festive*

Another distinction was presented by Truax (1984) and Porteous & Mastin (1985), categorized into two main types, taking into consideration how each individual perceives them: (i) 'useful' and 'meaningful' sound, and (ii) 'disturbing' and 'meaningless' sound. A real soundscape analysis considers the full range of sound, including both 'wanted' and 'unwanted' sounds, as well as both positive and negative aspects. Brown et al. (2011) classified sounds as produced by nature or human activity. In their soundscape indices model, Kang et al. (2019) divided them into three groups: other sounds, natural sounds, and human sounds. Their significance and dominance in the aural environment defined them. Margaritis et al. (2015), on the other hand, defined sound sources more precisely after classifying them into technical, natural, and anthropogenic categories. The

ISO/TS 12913-2:2017 standards and the classification used in these works are similar. Perceptual characteristics may be impacted by the number and variety of sound sources. Perceptual characteristics are significantly correlated with large spatial differences in a horizontal plane. (Hermida & Pavón, 2019).

2.4. Restaurant Soundscape

Beginning with the groundbreaking work in soundscape just over 50 years ago in the discipline of environmental acoustics, the emphasis has shifted from noise control to soundscape production, as well as from soundscape concept to practice. In urban open public spaces, the design potential of the four essential elements: sounds, space, people, and environment were demonstrated through with a soundscape design framework. The methodical approach to purposefully creating and organizing the soundscape was advantageous to improve practices and policies in urban open public spaces. This approach also demonstrated the benefits in various contexts and at various scales (Kang, 2021, 2023).

Converging data from several research domains (such as marketing and hospitality, music psychology, and experimental psychology) it is noticed that the sound environment affects behaviour in a variety of settings, such as shopping behavior in retail stores, restaurants etc. and symptoms of psychosis (Tarlo et al, 2021). According to Heung and Gu (2012) and Ariffin, Bibon, and Abdullah (2012), dining areas play a significant role in urban public spaces, and diners' assessments of the whole dining experience are influenced by the quality of the interior acoustic environment. This assessment impacts patrons' overall happiness with the restaurant and influences choices like whether to return and increase their consumption. The majority of previous research on the sound environment in dining rooms has focused on speech articulation. Emma Frid (2013) stated that a restaurant's soundscape is a dynamic acoustic setting. The quantity of patrons and the amount of background noise produced by diners attempting to have a conversation across the tables determine the restaurant's sound level in addition to the background music level. The overall sound pressure in a restaurant will rise even more than the typical additive effect as the number of diners increases due to the involuntary tendency of speakers to raise the level of their speech when speaking in noisy environments (known as the Lombard Effect) (Korn, 1954; Webster & Kumpp, 1962; Novak et al., 2010).

In their field study, Zheng & Zhang (2013) discovered that college canteens had low speech articulation, a typically poor sound environment, and a comparatively lengthy reverberation period. They also proposed solutions for these issues. Kang conducted research on the acoustics of dining areas from the perspective of speech articulation and put forth a plan to enhance speech articulation in these settings. Another subjective study conducted by Kang & Lok (2006) found that acoustics is regarded as a crucial feature for dining areas since it influences the quality of conversations, acoustic comfort, and the overall dining experience.

The servicescape has a significant impact on how visitors form their perceptions (Bitner, 1992). Additionally, a servicescape may provoke favourable or unfavourable responses that influence patronage variability (La Lopa, Novak, & Novak, 2010). The atmosphere of a restaurant's servicescape can leave a lasting effect on patrons. Loudness and the characteristics of background music are examples of auditory cues that can affect taste perception. Increases in background music volume or tempo (beats per minute), have been linked to a notable rise in food and drink intake (Spence & Shankar, 2010; Zampini & Spence, 2010; Woods et al., 2011).

The experience of the diners may also be impacted by noise and loudness levels in addition to the background music. Kryter (1985) came with the conclusion that excessive noise can cause tension, irritation, increased activity, and poor focus. However, a continuous sound or quiet could also be troublesome. Thus, maintaining a balance between loud and continuous sounds is essential to producing a pleasing acoustic atmosphere in a restaurant. According to Hellström (2006), the noises in a restaurant should blend in with the actual surroundings. Due to the fact that the human perception of noise is not absolute in the way that a physical instrument is (such as a sound level meter), the sonic quality of a restaurant cannot be evaluated by a simple set of loudness measures alone. The meaning of the sound in relation to its source and the listener is the primary factor that determines how noise is perceived by humans (Raimbault & Dubois, 2005). Therefore, the context in which the sounds are received determines how a sound environment is evaluated (Southwork, 1969).

In contrast to actual measured sound levels, Nilsson (2007) reported that sound source identification within soundscapes may be a more accurate indicator of soundscape quality. Axelsson, Nilsson & Berglund (2009) created the Swedish Soundscape Quality

Protocol (SSQP) to gauge how urban soundscapes are perceived on-site. A framework for studying how soundscape quality is perceived is called SSQP. By identifying the fundamental dimensions of soundscape perception, the framework makes it possible to test and enhance soundscape quality.

In 2010, Axelsson et al. examined the perception of prerecorded sounds classified as "human," "natural," and "technological". Adjective-based assessments were gathered by collecting excerpts from 50 soundscapes. Three primary dimensions: “pleasantness, eventfulness, and familiarity” were found to be significantly significant in the perception of soundscapes. The primary elements of pleasantness and eventfulness can be used to determine the urban soundscapes in two continuums. The following features, in turn, describe the two-dimensional space: pleasant, eventful, exciting, calm, monotonous, chaotic, unpleasant and monotonous. In order to rate the quality of a soundscape, the SSQP uses a framework that consists of eight adjectival unidirectional dimensions, which are represented by eight vectors put together in a circumplex model.

People's perceptions of sound sources in restaurant have been examined in the study conducted by Lindborg (2016). A four-level taxonomic classification of restaurant sound sources was collected on-site in 40 establishments by analyzing free-form annotations. Lindborg categorized the annotations by using three different concepts in addition to the two categories that were built into the Swedish Soundscape Quality Protocol. The results of additional investigation showed that due to an emotional cross-modal association mechanism, people preferred voice-related characteristic sounds that included a "people" specifier over those that did not. Respondents' liking of distinctive sounds varied between their first and last annotations, which might have happened because of an originally positive bias counteracted by exposure to a task that induced a mode of critical listening.

The majority of the restaurants examined by Emma Frid (2013) in her survey had somewhat high sound levels. The typical restaurant patron did not find this to be an issue and it had no significant impact on their overall dining experiences. If a loud sound level has the right frequency distribution, it might not be physically annoying. Additionally, the three restaurant categories were either improperly chosen or that the actual acoustic environment was not significantly impacted by the type of restaurant. A restaurant's total acoustic and perceptual quality depends more on factors other than the type of restaurant.

Battaglia’s (2015) study on restaurant acoustics specified that sound preferences of diners differ by age group. He suggested that to provide acoustical comfort for patrons of all ages, a specified, limited range of reverberation time between 0.5 and 0.7s would be ideal.

A study done by Ellermeier & Fastl (2004) reported that beyond (psycho-)acoustical measures like loudness, sharpness, or roughness, people's preferences are significantly influenced by the connotative associations that sounds generate. The soundscape approach provides a method that incorporates the listener's role, the context, and the meaning of a sound, in addition to measuring certain physical qualities (Lindborg, 2015; Kang & Aletta, 2018). Wilczek, Steffens & Weinzierl (2019) studied that auditive criteria can predict overall customer satisfaction and have an effect on how individuals view restaurants holistically. The study offered target values and possible measurements for reverberation time and loudness. The use of such target values emphasized the necessity of classifying restaurant types in order to provide guidance on "good" restaurant acoustics.

Chen & Kang (2017) determined that background music, co-diners' speech sounds, and the impact of tableware sounds had a significant influence on diners' assessments of acoustic comfort. The role of various individual sound sources in background noise was examined, taking into account general background music, speech sound, activity sound, and mechanical noise. The level of acoustic comfort among diners was higher in the presence of background music than when it was not. The acoustic comfort assessment of diners about sound sources was influenced by a number of characteristics, including the loudness, articulation, noise level, and degree of preference of each particular sound source. Regarding demographic and social characteristics, customers' assessment of acoustic comfort was significantly influenced by gender and how often they eat out.

A total of 142 diners of 12 Berlin restaurants were evaluated on pertinent acoustical and non-acoustical aspects of restaurant quality. The field study determined whether soundscape pleasantness, reverberation time, and sound pressure level could predict elements related to overall restaurant quality. Measurements in the unoccupied room were used to determine the reverberation time in the occupied state, and the occupied condition was then calculated. At the same time, the sound pressure level was measured. According to the results of linear mixed-effects models, soundscape pleasantness and

eventfulness were significantly impacted by both the sound pressure level and reverberation time. It was also affirmed that soundscape pleasantness was a significant predictor of overall restaurant quality. However, a thorough structural equation model that takes into account both acoustical and non-acoustical elements shows that the atmosphere of the restaurant acts as a mediator between the pleasantness of the soundscape and overall restaurant quality. The results also confirmed and expanded on earlier research indicating a trade-off between comfort and liveliness in restaurant acoustics, depending on the desired atmosphere of the establishment (Steffens et al., 2021).

Tarlao, Steele, and Guastavino (2019) studied by comparing in-situ surveys gathered from 2015 to 2018 at five different study locations in Montreal (N=1029). The Swedish Soundscape Quality Protocol, person-related (like personality) and situation-related (like activity) characteristics were included in the questionnaire at each location. The analysis showed that social interaction (alone vs. with others), extraversion, and noise sensitivity had an impact on soundscape evaluation. For instance, compared to individuals alone, those in groups thought the soundscape was more pleasant and appropriate, as well as less monotonous and chaotic. These findings have significant relevance for the planning and design of public areas, both indoors and out, and especially for the amenities that guide the activities conducted there. Methodological implications for enhancing soundscape questionnaires were also identified by the investigation.

Study conducted by Steffens and Weinzierl (2023) aimed at examining the complex interrelationship between acoustic, non-acoustic factors, soundscape evaluation on restaurant visit and quality. Additionally, they found three non-acoustic factors namely ‘product’, ‘atmosphere’ and ‘service’ by principal component analysis. This paper also revealed that sound pressure level directly had negative impact on restaurant quality.

Thus, the relevant literature emphasizes on the different aspects of sound and soundscape from varied perspectives. The marketers employ different tactics to attract customers, retain them and try to enhance their experiences. The acoustic and non-acoustic factors in any context especially restaurants affect the assessment of restaurant quality and satisfaction of the diners. The two main elements namely music and noise along with minor sounds in consideration for the study also require a thorough understanding by highlighting the importance of the above sections. Thus, it is important to study the role

of music and effect of noise from diners' perspective. The upcoming sections shall highlight the studies carried out on specially, music and noise in restaurants.

2.5. Music and Dining Experience

Experience is defined by Schmitt (1999) as unique occurrences that arise in response to certain stimuli. While Pine II and Gilmore (2013) established that experiences are things that provide people a chance to interact personally. Berry et al. (2002) opined that experience is the arrangement of all the data that customers gather throughout the purchasing process. Restaurants are places that provide authentic and distinctive experiences, enabling customers from various areas to explore other cultures via its cuisine. The dining experience at a restaurant is a complex idea with many different aspects that influence how patrons perceive it. The experience is influenced by a number of factors, including the food, cleanliness, location, ambiance and atmosphere, decor and service staff (Seyitoğlu & Ivanov, 2020). There is a multifaceted structure to the quality of restaurant atmosphere. Since customers interact with the staff and atmosphere of restaurants prior to their meals, these factors greatly influence the first impression that they get and form. Adoption can therefore be experienced from the customers' perspective (Uslu, 2020).

In this study the researcher is focusing on the auditory stimuli affecting the dining experiences of the restaurant guests. Previous research reveals that customer satisfaction and experiences are impacted by their musical preferences (Shashikala & Suresh, 2013). In order to evoke customers' emotional states, the café owners should adjust background music by modulating its volume (from loud to soft), tempo (from fast to slow), and genre like jazz or classical according to the customer's choice (Han et al., 2009). Additionally, the genre of music performed might have a favourable or negative impact on the listener's mood. Music also affects diners' mood, pleasure, and emotions. Pop and classical music make listeners feel more at ease and less stressed or anxious. (Rea et al., 2010). Additionally, music has an impact on guests' perceptions of wait times at cafés and restaurants (Brattico & Jacobsen, 2009).

Leonidas, Manola & Papadogoulas (2024) conducted a study to look at how customers' perception and ordering decisions are influenced by music. One of the elements that influence how the human brain functions is music. The amygdala is used by the memory

system of the human brain to assign a positive or negative rating to experiences and their potential. These recollections cause people to reevaluate whether an experience is to be repeated or not. Certain emotions and feelings have the power to evoke memories and influence behaviours when they are triggered under circumstances that are similar to a former event. Music frequently correlates with particular experiences, which gives the brain the stimulation it requires. The study investigates how the tempo, genre, and volume of the music affect the ambiance of the restaurant as a stimulus that directs perception based on memory rather than reality.

Mathiesen, Mielby, Byrne, and Wang (2020) did a study to find out the impact of unique musical characteristics like tempo and articulation on span of dining. Three distinct sound environments namely, quiet, slow + staccato, and fast + legato music were used in the experiments to study eating time. Overall, the results demonstrated a strong correlation between tempo and musical articulation as well as a considerable critical influence of tempo on eating duration. Longer eating times were associated with slower tempos, and only when the music was slow the legato articulation increased eating times. Additionally, compared to eating in quiet, individuals' eating time was considerably boosted by music, regardless of genre. According to reports, music can serve as a cultural cue to adjust eating speed, promoting slower eating and other healthful eating habits.

Kemp, Williams, Min, and Chen (2019) assessed the psychological impact of music on consumers in USA. To determine the effect of music, two distinct types of studies were conducted. The first step was to do exploratory research to see what managers in the restaurant, attraction, and hospitality sectors thought about using music as an atmospheric component. It was discovered that most members of the industry agreed that music plays a significant part in the service atmosphere. Two groups of eaters were selected for the second experiment, which was conducted in a restaurant. Customers who were exposed to music scored higher on measures of managing their mood, sense of empathy, reliability, product quality, and purchase intention.

Mufeeth and Mubarak (2019) centered their investigation towards the impact of music tempo on consumer behaviour in supermarkets. The study examined the impact of music as a stimulus on consumers' emotional states, including pleasure, arousal, and behaviour. Additionally, the impact of their emotional condition on their enjoyment, purchase

satisfaction, time spent, and willingness to pay was examined. The majority of patrons enjoyed English music with a slow tempo. Playing background music energized and stimulated the customers. Customers least preferred fast tempo music while shopping and were less likely to eat in fast tempo music.

In 2003, North and his associates conducted a study on the impact of musical style on restaurant customer spending, which found that "appropriate" background music increases actual restaurant expenditure. For eighteen evenings, they performed pop and classical music, and on other days, there was no music at all in a British restaurant. Additionally, money spent on wine and bar drinks, the total cost of the food and drink, the total amount spent, and the amount of time spent at the restaurant, the average amount of money spent per person at each table for every course of the meal (starters, main courses, desserts and coffee) were determined. Their findings suggested that pop music was not the best or most suitable genre to address the issue of background music. Additionally, they found that listening to classical music increased actual expenditure, and that people were willing to spend more money. The preferred dimension of music (whether familiar or not) and its structural elements like tempo, volume, and mode influenced patronage, sales volume, and the degree of satisfaction with the restaurant. Relationship between the ambiance and the cuisine and classical music influenced consumers to choose more costly items have been established.

Pantoja and Borges (2017) investigated how music affected people's perceptions of taste and their intentions to purchase food. He outlined the five primary elements of music: dynamics, timbre, rhythm, tempo, and mode. One of the most significant factors influencing food consumption was found to be the tempo in music. Fast music encourages diners to consume their food and beverages more quickly. A faster tempo enhanced excitement, regulated client mood, and enhanced taste and purchasing preferences. Through changes in affective states, fast music tempo boosts food consumption and sales more than slow music.

Caldwell and Hibbert (2002) explored how customer preferences for a certain genre of music are influenced by the tempo of the music. The main objective of the study was to find out whether the music tempo influence the actual time spent by a customer or not and their preference for music. The results of the study confirmed those of previous

studies that reported that customers spend longer time listening to soft-tempo music. The introduction of music changes has a significant impact on diners' eating patterns.

According to Hul, Dube, and Chebat (1997), music is a crucial component in service setting and, when employed properly, can improve consumer behaviour. One of the ways to do this is by enhancing consumers' emotional reactions to the service environment. A variety of musical genres can influence how people perceive the service environment as a whole. It was also determined that adding music as a practical element enhanced visitors' opinions on restaurant decorations. Playing music improved the general impression of the service area.

Karapetsas et al. (2015) opined that eating habits are impacted and dictated by both external and internal elements. These external factors include the atmosphere and, particularly, the dining setting. One of those elements is music, whose power is equally evident in both health and illness (mental or physical weakness). It was observed in a music listening condition that change (improvement) in eating behaviour occurred as a result of a mood change. The emotional aspect of music affects a person’s mood directly; inducing changes not only to his eating behaviour but to his behaviour in general (Gardner, 1985).

Milliman (1986) analysed the effect of background music on restaurant patrons. The following factors were examined in various musical settings with fast and slow music tempos: service time, customer time at the table, customer group leaving before being seated, quantity of food purchased, and amount spent in bar purchases. It was found that the majority of clients preferred slow music tempos. Adding music to a service setting might enhance its perception. When the service environment and music are well matched, the impact of music can be more positive and noteworthy.

Another set of researchers acknowledges the divergent results of the growing body of studies on the stimulating impacts of music in the hospitality and tourism sectors. Instead of concentrating on a particular context, the authors of this seminal study focused on a meta-analysis of hundreds of studies into the impact of music. They found that the clients' "organismic reactions and behavioural responses" were influenced by the design rather than just the music. The researchers concentrated on the five aspects namely the presence of music, volume, tempo, congruence, and liking of music. They found a "small

to moderate and marginally significant effect on customers" with regard to the tempo, but no meaningful outcome on consumption and expenditure. Despite the belief of the managers that music is crucial for establishing an ambiance and affecting the emotions and actions of their patrons, the relationship between songs and consumption is neither clear-cut nor simple to ascertain. The quality of the product, the harmony between the music and the other components of the "servicescape," and the diners' enjoyment of the music that is offered along with other things that need to line up for the management to get the intended result. When choosing the right music background for each establishment, factors including age, gender, income, education, and ethnicity must be taken into account. It was said that there is no one-size-fits-all solution (Trompeta et al., 2022).

Baid and Madhwani (2024) acknowledged that the atmosphere of restaurants is greatly influenced by music, which also affects how satisfied patrons are with their meals and overall dining experience. With the growing recognition of the significance of ambiance in restaurants, the strategic use of music becomes a crucial element in improving customer satisfaction and service quality. Through the analysis of data from 400 respondents, the study explored the ways in which various aspects of restaurant music affecting the patron experience.The results show that dining frequency is highly influenced by age, with younger customers eating out more frequently. Age-specific musical tastes differ, with jazz and classical music being the most popular.

Chen, Chiang, Lee, and Tsui (2022) carried out an empirical analysis of preferences for background music and its effects on customers' emotions and behaviour at an upscale Chinese restaurant. One significant element influencing customer behaviour during the dining experience is the music environment of a restaurant, particularly silent dining behaviours among those who are discouraged from speaking during the COVID-19 pandemic. Purposive sampling and snowball sampling were used to gather 393 valid samples in total. A personal background information questionnaire, four Oriental and Western music conditions, a preference scale for background music, a scale for assessing emotions throughout the eating experience, and a behavioural response scale were used in this study. The findings suggest that the participants favoured the Butterfly Lovers Concerto, a piece of Chinese classical music. The participants' emotions during dining were influenced by background music, and there were significant differences in

their emotions and behaviour based on the background music setting. Under all four music situations, the customers' behaviours were significantly predicted by their emotions during the dining experience. This study's main contribution and significance comes from the outcome that restaurant background music influences patrons' eating behaviour by evoking particular favourable emotions during the dining experience.

In an Australian restaurant for two weeks, Wilson (2003) played four different musical genres—classical, jazz, popular, and easy listening and no music at all. The findings showed that the perceived atmosphere and the amount of money that customers were willing to spend varied depending on the style of music. Popular, jazz, and classical music were linked to customers who were willing to spend the most on their main course. While in case of easy listening and no music, the value was found to be significantly lower. There were evidences to suggest that the kind of music played also affected how much money customers actually spent at the restaurant. This study suggested that music in a restaurant setting had a positive impact on customers spending and willingness to pay. The study as a whole, helped in creating a model to explain the connection between music and consumer behaviour. This study was extended by Mandila and Gerogiannis (2012) and found that different musical genres have little impact on consumers' overall satisfaction. However, the respondents' gender and the volume of the music were the two primary determinants of satisfaction.

According to a study by Rohrmann (2012), patrons have particular preferences for music. The extent of their satisfaction with a restaurant experience depends on how they perceive the musical environment. Despite the significant sound levels (Leqs up to 85 dB, with peaks far beyond 100), the majority of customers were able to tolerate these levels. It appears that the culture of dining establishments has changed; loud soundscapes are preferred or at least accepted, whereas quiet settings are rarely sought after. These results were concluded in the context of a broader trend: music has become more prevalent in public spaces of all kinds, and quietness has become less common.

Roy (2017) studied psychographics in restaurant in Silchar, Assam. The study indicates that people like to spend more time in restaurants by listening music. The study has its importance on the ground that it tried to relate the psychographic profile with the restaurant business in order to understand the future prospects of the restaurant business in Silchar. So, they suggested that if the restaurant owners offer musical arrangement in

their restaurants during the weekends or on weekdays, there is a chance of an increase in the number of customers.

The above extended literature review discussed different elements of music with respect to restaurant and dining experience. The coming sections shall delve into the important aspects of music, i.e., live music and ethnic music.

2.5.1. Live Music

According to Nettl and Russell (1998) and Freeman (2000), music is a global social phenomenon that is typically experienced live. People's perceptions of music changed as recording technology became available in the late 19th century, making it possible for private, in-home consumption to become more convenient (Moreau, 2013). Many people still go to experience live music, sometimes at high costs and in uncomfortable situations, even though technology has made it easy and inexpensive to listen to music (Baxter-Moore & Kitts, 2016; Brown & Knox, 2017). Live music is regarded as an asset since it attracts tourists to communities, create a feeling of belonging, and support a vibrant cultural environment, among other advantages (Hudson, 2006; Wynn, 2015; Martin, 2017).

Live music has been used in hospitals as a therapeutic and health-promoting tool. The use of music has helped create calmer hospital settings where patients are less agitated and visitors report feeling less stressed and increase attention level (Tansik & Routhieaux, 1999; Preti & Welch, 2011)

Oakes and Warnaby (2011) stated that the majority of previous research on music in service or retail contexts has focused on background music in indoor settings. It has been recognized that music has the power to change how people perceive any space, whether it is actively listened to as a live concert performance or passively heard as a pre-recorded servicescape element. The idea of heterogeneity, which was taken from the literature on services marketing, offers a helpful theoretical foundation for connecting and differentiating between live, recorded, indoor, and outdoor music. Because live performances are inherently unpredictable, live concerts have a higher level of heterogeneity than pre-recorded servicescape music. The study looked at how outdoor live music performances added to an overall urban servicescape alter the perception

of urban settings. The discussion covered a wide range of outdoor musical performances, from busking to major festivals. The benefits of live music in urban settings were to the local economy and increased arts engagement. Key topics were covered in the context of the larger literature on place marketing. To conceptualize the function of music in urban settings they used three different continua: managed/spontaneous, spectacular/mundane, and exclusive/inclusive. Since jazz has always been recognized as an urban genre, each continuum is examined in relation to jazz performances in a particular urban space.

van der Hoeven and Hitters (2019) provided an overview of the social and cultural values associated with live music ecologies in urban areas. This was based on a qualitative content study of live music strategies and reports from Australia, the US, South Africa, Canada, Ireland, the UK, Scotland, and the Netherlands. Adding to the growing body of research on urban live music ecologies, the study highlighted on the social and cultural benefits of popular music performances in urban areas. They found three distinct variables for cultural value (musical creativity, cultural vibrancy, and talent development) and social value (social capital, public engagement, and identity) in the analysis.

Swarbrick and associates (2019) investigated the impact of fan status and live versus recorded music on audience head movements and involvement with the music. The head movement reactions during a live album release concert with Canadian rock star Ian Fletcher Thornley and a concert without the performers, where the identical songs were played from the recorded album, were compared using motion capture. Since the album had not yet been released, they also compared fans and neutral listeners to examine the effects of a previous connection with the artists while controlling for familiarity with the songs. Compared to the album-playback concert, head motions were quicker during the live performance. Compared to neutral listeners, self-reported admirers moved more quickly and showed higher degrees of rhythmic entrainment. These results demonstrate that live music engages listeners to a larger extent than pre-recorded music and therefore and stronger engagement was also correlated with an audience's pre existing admiration for the performers.

Čustović (2021) studied the impact of live music on customer satisfaction, ambiance perceptions, and overall guest experience at Dubrovnik's hotels, bars, and restaurants. The study evaluates different locations and finds important elements that contribute to

the effectiveness and advantages of live performances in the hotel industry, such as their capacity to increase patron engagement and produce unforgettable experiences. It was found that restaurants with live music had more positive comments and where rarely live music played had more negative comments. Additionally, suggestions for enhancing live music tactics in these contexts were given.

Study done by Kubachi (2016), aimed to provide a more comprehensive knowledge of jazz musicians' experiences and their contribution to live performance. A total of sixteen prominent jazz artists participated in twelve biographical interviews. However, the respondents were more likely to view their live performance as an experience produced by the product itself, even though they acknowledged audience, agents, and venue owners as crucial components of their offering. The study found possible sources of misunderstanding in a strongly competitive market. The quality of the relationships between musicians and the larger industry has to be greatly improved. Among the practical implications the venue managers must think about the effects of bad relationships with artists, since such a behaviour may detain their capacity to retain their customer base.

An exploratory study by Matthew Hill (2018) conducted by interviewing five musicians of their experiences on live performances. Study indicated that most customers would be prepared to pay more in a restaurant with live music.

The study by Holt (2010) advances the idea of a new live music economy and theorises the concept of live music in light of such changes. In order to outline the key components of the new economy, it is first theoretically and historically examined how concerts are perceived as live music. The categorical shift in concert ticket pricing and the growing economic importance of live music are two direct factors. The emergence new event genres and the larger dynamics of the digital information society are two additional factors

From the above literature it can be said that live music certain effect on customers depending upon setting and the context. The next section shall highlight on ethnic music and studies related to the impact and congruency of ethnic music to dining experience.

2.5.2. Ethnic Cuisine and Ethnic Music

Increased culinary tourism globally promotes innovation in culinary arts, food literacy, cultural identity, and local entrepreneurship, as well as balancing sustainability and development in tourist areas (Ranteallo & Andilolo, 2017). Because culinary tourism offers travellers unique food and beverage experiences, as well as taste, texture, culture, heritage, and local culinary traditions and customs (World Food Travel Association, 2019, Sinha et al., 2017) visitor preferences need to be taken into account, arrange the food and drinks in accordance with visitors' demand. Ethnic themed restaurants showcase specific culture, and offers ethnic cuisine in a setting (Ebster & Guist, 2005). Türker and Süzer, (2021) determined the value of food and beverage consumption as a percentage of total tourist spending. The general consensus is that travellers frequently spend a large percentage of their budget on meals, particularly those that represent the local cuisine, however results vary by region and study. The reason for the popularity of ethnic restaurant is that they offer the chance to experience different flavours and immerse oneself in authentic culture of a particular community (Liu & Mattila, 2015). Ha and Jang (2010) mentioned that the satisfaction of service and food quality in an ethnic restaurant can be influenced by the quality of restaurant atmosphere. As suggested by Chhabra and associates (2013), there are five perspectives which can be used to describe authenticity: constructivist, negotiated, existentialist, objective/essentialist, and theoplacity. The essentialist concept also known as *objective* in existing literature refers to pristineness and originality, such as being produced locally by ethnic communities or manufactured in the area of origin (Chhabra, 2010). According to the *constructivist* perspective, all assessments are influenced by the circumstances and existing market forces. According to Mac Cannell (1992), the readings based on this viewpoint deal with fully commercialized forms of authenticity, such meticulously created pseudo-backstages and hyper-real situations. The negotiated school of thought then proposed a compromise between the existentialist and essentialist theories and the essentialist and constructivist views. The essentialist/constructivist approach to *negotiating* suggests that service providers and customers jointly create authenticity. Further, it was stated that by carefully embracing change and consumer desire, aspects of object authenticity can be maintained. As a result, this procedure can be helpful in charting a middle route. According to the second negotiated position version of negotiation, *theoplacity*, customers can have the most exciting and optimum experience in situations that are

objectively authentic. The last concept of authenticity, which refers to concepts like "self-discovery" and "being true to oneself," contends that individual meanings and mental states determine the best authentic experience. Along with being authentic in food, Ritzer (1999) emphasized the need for "entertainment of eaters," or "traditional cultural eatertainment". According to the analysis of ethnic restaurants in Zimbabwe by Mkono (2011), found that they offered a wide range of "cultural products and performances such as traditional music and dance, sculptures and carving displays and demonstrations, ethnic architecture and décor, traditional dress display and sale, local ethnic cuisines and traditional story telling". Traditional music and dance, sculptures and carving displays and demonstrations etc. are just a few examples of the various cultural markers that hotels and restaurants typically offer in the form of products and performances (Mkono, 2012). This indicates an attempt by the local restaurateurs to provide an objectively genuine "eatertainment" product and experience in a variety of cultural contexts.

The management must arrange the food and beverages as per the preferences of customers and provide unique or unforgettable experiences (Ali et al., 2015). An unforgettable experience is influenced by the cuisine, food quality, restaurant atmosphere, and unique features. Furthermore, a memorable dining experience does not always necessitate an unforgettable destination. Remarkable factors for customer satisfaction and experience include different cuisines, local cooking and presentation techniques, hygiene facilities, the appearance of the service staffs, and local socio-cultural elements like music (Kala, 2020).

Wen, Leung, and Pongtornphurt (2020) focused on ethnic restaurants and attempted to ascertain how background music influences perception of diners and how these perceptions impact general satisfaction and behavioural intentions. Music congruency and enjoyment were found to have a significant impact. It was found that perceived authenticity was more significantly impacted by the restaurant's aesthetic and the coherence of ethnic music than by the enjoyment of the music per se. It was also found that one effective strategy for influencing perceived authenticity was the coherence of music and the themes of ethnic restaurants. Customers' overall satisfaction with their dining experience and behavioural intentions were also influenced by this perceived

authenticity. The results of this study supported the claim of the cue consistency theory that signs are more useful and effective when they are accompanied by facts.

Feinstein, Hinkston, and Erdem (2002) conducted a study at a military dining facility. It examined how different music genres impacted the selection of the ethnic menu item. Italian and Mexican music were randomly assigned to the subjects who were to make selections of Italian, Mexican, and American cuisines during their experiment. A positive relationship was found on the Italian menu item selection while Italian music was played. Mexican music did not have a significant impact on the selection of the Mexican menu item selection. Italian music was found to have the strongest impact on the selection of both Italian and Mexican menu items.

Spence, Shankar, and Blumenthal (2011) undertook a study to test the congruency of music and respective dishes. Although the study did not look specifically at music, it did look at sound treatment impact of congruency on oyster dishes. Two sound treatments were used in the consumption of oysters. One being sounds of the sea and the other being farmyard sounds. The participants receiving the sounds of the sea sound treatment rated the tasting of their oysters as more pleasant than the participants in the farmyard sound treatment. The findings supported congruency factors of the sea with the association of the particular food with the sounds being heard.

In another study related to music congruency, the auditory study showed that back ground noise/music impacted purchasing decisions (North, Hargreaves, & McKendrick, 1999). The study examined the sounds of French accordion music and German Bierkller music gauging its impact on the purchases of French wine and German wine respectively. This resulted in a congruency of musical impact. In the French accordion music setting, 77% of wines purchased were French and when German Bierkeller music was being played, 73% of wines purchased were German (North, Hargreaves & McKendrick 1999).

Muniz (2013) studied the impact of music type along with restaurant background sounds as part of the restaurant's atmosphere. Specifically, it looked at the congruency effect of musical stimuli of ethnic music on ethnic food. Music was the independent variable which was randomly assigned to each subject in the study. The results showed the presence of congruency effect between Italian menu and Italian music and Thai food and

Thai Folk music. Taking a base of the study that examined ethnic congruent versus incongruent music, Muniz, Harrington, Ogbeidea, and Seo (2017) carried out a study to compare the effects of ethnic congruent music, ethnic incongruent music, and restaurant background sounds on the dining experience. It also expanded on previous studies that looked at how music and sound affect menu item choices and price expectations. The results showed that practitioners and researchers should take baseline sounds and music congruence effects into account. Compared to restaurant background sounds, Italian folk music increased the Italian item selection. The background sounds for Thai items were equivalent to Thai folk music. Both background sound and Italian music were associated with higher expected pricing.

In an eye-tracking study to determine whether ethnic music influences the choice of ethnic foods, Szakál, Cao, Fehér, and Gere (2023) recruited 104 volunteers. While ethnic music from Germany, Hungary, Italy, and Spain was performed, participants selected appropriate starters, main courses, and desserts. The results indicated that playing any kind of background music reduced visual attention. However, when Spanish music was played, it drew the greatest visual attention. In the same manner, Spanish food received the highest visual attention. There were no differences in the frequency of food choices among the four countries. But when combining Italian-Spanish and German-Hungarian music and cuisine, it was noticed that participants selected congruent food and music. Additionally, choice predictions for data with and without ethnic music were completed. When music was played, prediction models performed significantly better.

The study examined the impact of instrumental Spanish or Italian music in a university dining hall on the choice between a Spanish (seafood paella) or Italian (chicken parmesan) entrée. Students have the option to choose between the Spanish and Italian entrées or alternative cuisine options on two separate evenings. One night there was Spanish music, the next Italian. On both nights, the number of patrons who selected the two entrees was noted. Additionally, when congruent or incongruent music was played during the meal, the hedonic ratings of the two entrees were determined. The seafood paella was not as popular as the chicken parmesan on both occasions. Nonetheless, the music had a big impact on the choice of meals. On the night that the Spanish music was played, a considerably higher percentage of customers (34%) chose the paella instead of the chicken parmesan than on the night when the Italian music was played (17%).

Because the music was not as loud where customers were eating as it was where they ordered, there was no influence of the type of music on their enjoyment of the cuisine (Zellner et al., 2017).

Jang, Liu, and Namkung (2011) studied the relationship between authentic atmospherics and consumer emotions and behavioural intentions in Chinese restaurants in the United States. A total of 348 self-administered questionnaires were obtained from full table service restaurants. The study tested a proposed model using Anderson and Gerbing's two-step approach: a measurement model and a subsequent structural model. The results showed that consumers' positive and negative emotions were significantly influenced by authentic atmospherics, and that both types of emotions act as full mediators between authentic atmospherics and behavioural intentions. Regression analyses showed that music, furnishings, and menu presentation were significant predictors of positive emotions, while these factors significantly influenced negative emotions.

A study was conducted by Shehata and associates to ascertain how customer satisfaction at ethnic restaurants in Cairo and Giza was impacted by the ambiance of the establishments. In order to help ethnic restaurant operators better understand the demands and attitudes of their patrons, the study sought to ensure that the ambient aspects of ethnic restaurants had a positive impact on consumer satisfaction. Questionnaires and structured interviews with managers of ethnic restaurants were used to gather data. Five and four-star ethnic restaurants (27 restaurants) received a total of 600 forms. The findings demonstrated the importance the ambiance of ethnic restaurants is to customer satisfaction (Shehata et al., 2016).

Lili Gai (2014) opined that restaurant industry has realized the importance of authentic and the current trend is to move toward “authentic” ethnic cuisine and offers both authentic food of a specific culture and authentic dining experience and environment, such as background music and decorations. According to Oakes (2000) and Ebster & Guist (2005), physical surroundings that contribute to a cultural experience are also significant. For this reason, ethnic restaurant operators aspire to create unique dining experiences by highlighting authentic atmospherics like decorations, interior design, or music for memorable dining and entertaining experiences (Robinson et al., 2018; Prayag et al., 2020). These days, consumers anticipate an authentic dining experience at ethnic restaurants as they have become more familiar with diverse ethnic cultures. Therefore,

ethnic food itself will no longer be the only decisive factor in the success of ethnic restaurants (Jang et al., 2011).

A significant aspect of Indian culture is food. It acts as a symbol of Indian identity. But when we talk about food, we're not just talking about the dish itself; there are many additional elements that are crucial to the whole process. The study by Joshi (2022) attempted to comprehend how the songs have evolved into an essential component of the Indian culinary identities. There is, in fact, a musical tradition that revolves around food in all of its forms. In addition to providing a detailed analysis of a few instances of these songs centered around food from various communities. However, the perspective of the study was different but music seems to play a significant role with respect to music. In tune to this another study on agricultural songs of Assam pointed out the connection between food, agricultural products and songs (Bhalerao et al., 2016)

With regard to "restaurant/eatertainment" experiences, the study by Chhabra, Lee, Zhao & Scott (2013) intends to investigate how Indian restaurants outside of India negotiate and project authenticity onto toured symbols (both tangible and intangible). Using specified authenticity criteria and an a priori list of authenticating signals, this study critically scrutinizes the internet promotional content of north Indian food in the USA. The study's findings shed light on how ethnic Indian cuisine has contributed to the commoditization of "Indianess". Eating at an Indian restaurant is arguably a front-stage heritage experience, where the presentation, use of traditional clothing and language, utensils, and food ingredients are all authentically designed to entice customers who want to experience the "other". The final result is an "eatertainment" experience tailored to the need of the customers.

Chitlur & Regi (2019) discuss that environmental and psychological factors are among the different variables that influence eating behaviours and habits. The study emphasize on the influence of Carnatic music on dietary choices, intake, and amount. 30 people were randomly selected for the cross-over study after the questionnaire was sent to100 residents of Bangalore. The study was conducted in two stages: the experiment, which involved listening to Carnatic music, and the control, which involved total quiet environment. The study's findings showed that 46.6% of participants made healthier decisions, and that listening to carnatic music increased food intake and duration

(p=0.001). Therefore, it was said that Carnatic music does influence one's diet and eating pattern and behaviour.

The previous part dealt with different literature and studies showcasing the impact of ethnic music on ethnic cuisine in a global context, including India. Subsequently, the next subsection will shed some light on the available literature on ethnic music and ethnic cuisine specially in Assam and Northeast India in general.

2.5.2.1. Ethnic Cuisines in Assam

The following sub-section highlights studies related to ethnic cuisine of Northeast especially Assam. The Northeastern region of India is home to over 220 separate ethnic groups, and more than 30 of them are in Assam (Hazarika, 2018). Assam has a massive population with socio-cultural and ethnic diversity. Ethnic diversity can be seen in terms of belief, language, rituals, food, music, attire, and so on (Zenner, 1996). Assam is a natural conglomeration of various ethnic tribes and groups, each having a distinct language, culture, songs, dances, and festivals (Assam Government state portal). Ethnic food is recognized as a marker for ethnicity (Lu & Fine, 1995) and a representation of traditional culture (Verbeke & López, 2005).

Tumung and Saikia (2021) explored on the cuisines of the North-Eastern States of India. The study determined the consumer preferences of the ethnic cuisines of North-east India, specially Guwahati city. The study found that respondents' preferred cuisine depending upon their geographic index. Although the majority of respondents generally preferred to eat ethnic and traditional cuisines, those who expressed the greatest preference for these types of food were between the age group of 16 and 25.

Sarma (2024) stated that a community's culture can be better understood by studying its eating patterns. In this context, a field study was carried out in the Assamese village in the Jorhat district. The research on eating habits from the viewpoints of the environment, society, and culture, with current changes served as the foundation of the study. The study has determined the relationship between food, society, and culture overall based on observation and data collection.

R. K. Das (2021) mentioned that Assam is a cultural gem that displays a diverse range of customs, beliefs, and behaviours. The state's varied ethnic groups, each of which contributes distinctive customs, dialects, and traditions, define its complex cultural landscape. Assamese-speaking people make up the majority of the population, and indigenous groups like the Bodos and Karbis promote respect and a sense of community. Assam's culinary legacy, which emphasises simplicity and freshness, is reflected in its geography. Cultural identity and social ties are reinforced by traditional foods like *pitha* and ethnic dishes like *khar, tenga masor jul* etc.

Kalita (2021) discussed Assamese food from a different perspective. Food and its components are as cultural, social, and political as they are physiological. Boundaries based on caste, gender, ethnic identification, class, and other factors have historically been marked by food. Concerns over what and who is "authentic" and "real" to Assamese identity have been a recurring problem in Assam. Therefore, she examined how some gendered norms and duties are (re-)defined when "Assameseness" is established through food.

Gam (2023) mentioned that traditional foods and dances are significant parts of a culture. The study identified the indigenous food and dances of the Mising Community of Assam.

Deuri and Thangjom (2022) studied the traditional food practices and distinctive cultural heritage of the Deori tribe, an indigenous group in Assam. The study was carried out in Bahgorah village in the Lakhimpur District of Assam. The Deori tribe's cultural food habits and the impact of the modern era on cultural culinary heritage were examined in the study. The traditional food preparation techniques and their contribution to maintaining Deori cultural identity were highlighted in the study. The purpose of the study was to provide light on the ways in which these eating customs support the cultural resilience of the community.

Anand and Tharakan (2018) discussed the opportunities and challenges of marketing Assamese cuisine in the context of modern product marketing trends. The study explored how rich culinary traditions of Assam can be commercialized while preserving its authenticity. They also focused on addressing issues related to regional identity, branding and the integration of traditional foods into global markets in this competitive world.

A study conducted by Monika Das (2021) found the food that Assamese cuisine can be regarded as healthy. Globalisation has drastically altered Assamese cuisine. It is also evident how foreign cuisine has replaced traditional cuisine which is creating a threat for the culture. The characteristics of traditional Assamese cuisine, the ingredients utilised in its preparation, and the range of things on the platter were the main subjects of the study.

2.5.2.2. Ethnic Music in Assam

This sub-section comprises the studies related to folk music, ethnic music of Assam. The dictionary meaning of the term "ethnic" refers to or being a member of a race, or relating to large groups of people on the basis of common racial, national, tribal, religious, linguistic, or cultural origin or background (Barnhart, 1982;). The adjective "ethnic" lends an affiliative meaning to a group of individuals, referred to as the race (when it is employed as an adjective). Being ethnic in the context of music is being a part of a culture that has been developed throughout time by that particular group of people. More significantly, ethnic music is a component of instruments that aid in the development and dissemination of a culture. Because ethnic music is so important to the national culture, there are too many expectations placed on it. It acts as a mirror, reflecting all of the actual traits of many regions and ethnic communities (Cui & Khomkrich, 2022).

Saikia (2024) explained in his study that since ancient times, Assam has been home to numerous ethnic groups, each with unique social and cultural traits. Lower Assam is home to numerous ethnic groups, including as the Bodo, Rabha, Koch, Garo, and Hajong. Through folk literature, the study aimed to provide a thorough understanding of how folk music has influenced Lower Assamese social, cultural, and musical life. It was found that folk music is transmitted orally. The ethnic tribes of South Assam also influenced the tasteful minds of upper Assam with musical consciousness during the process of forming the greater Assamese nation.

Boro & Bairagi (2015) mentioned that it has become increasingly popular to include aspects of folklore and folk life into modern literary works. Folk traditions have been relocated to the contemporary cultural environment as a result of such creative exercise and investigation of the ancient forms. Bhupen Hazarika has experimented with the Assamese folk tradition in the realm of popularizing Assamese music, giving it new significance in the contemporary societal context while also revitalizing and conserving

it. The study attempted to examine how the composer has incorporated aspects of Assamese folklore into his timeless works, causing them to change from being simple and plain to having new significance and content.

2.6. Noise and Dining Experience

Noise is an important element of soundscape. Barry Truax (1984) provided four definitions to noise, first, it is an ‘undesirable sound’; second, it is a ‘non-musical sound’; third, it refers to any ‘high-pitched sound’; and fourth, it refers to any ‘sound that interferes with communication’. However, the definition that defines noise as an "unwanted sound" is among the first and unquestionably the most accurate to describe noise. Any sound that a person finds unpleasant and restricts them from hearing desired sounds is considered as noise (WHO, 2011; Aninga & Lanser, 2013). As a result, noise is only associated with the subjective and individual perception of a person. There is a chance that a person may consider music may simply be noise to others. Based on psychological, social, and cultural factors, a person's perception determines and distinguishes sounds from noise (Berglund et al., 1996).

Noise is a subject which is studied by different scholars from different disciplines and areas. For example, Yilmaz & Ozer, 2005; Goines, 2008 studied the effects of noise on people as well as wild animals and birds (Mbaiwa, 2003). Numerous research have examined the impacts of noise in schools (Stansfeld et al., 2005; Rabinowitz, 2005); workplaces (Palmer et al., 2002; Abo-Qudais & Abu-Qdais, 2005; Feder et al., 2017; Houmøller et al., 2024), residences (Espey & Lopez, 2000; Goines, 2008; Bełej, 2020), and medical facilities (Morrison et al., 2003; Willich et al., 2006; Elmenhorst et al., 2010; Eze et al., 2018). Basner et al. (2014), Lie et al. (2016), Passchier-Vermeer & Passchier (2000) mentioned noise as a pollutant having negative impact on health and economic consequences. Its effects are connected to conditions like stress, sleep disorders, hypertension, cardiovascular diseases, hearing loss, tinnitus, and dementia (Basner et al. 2014; Cantuaria et al. 2021; Nelson et al. 2005; Livingston et al. 2017, 2020). Along with auditory effects of noise there are non- auditory effects (Mehrotra et al, 2024).

Apart from industrial noise, all noise generated by human activity are categorised as environmental or community noise. After decades of research, it has been determined

that transportation sources like air, rail, and road traffic are the primary source of environmental noise (Morrell et al, 1997; Berglund et al., 2000). Neighborhood and recreational noise as well as noise from civil construction, are the other sources of environmental noise. Any sound that disrupts the regular behavior of an individual by making it difficult to relax, and generally makes daily living stressful is seen as noise (Miedema, 2007; Short et al, 2010). The measurement of noise is similar to any other type of sound and measured by decibels (dB).

2.6.1. Noise Annoyance and Noise Sensitivity

Noise annoyance is the emotional and attitudinal reaction of an individual to an unwanted sound (Shepherd et al., 2015). The definition is expanded by Passchier-Vermeer and Passchier as "the feeling of resentment, displeasure, discomfort, dissatisfaction, or offence when noise interferes with an individual's thoughts, feelings, or actions". The sensation of noise annoyance is highly personal and differs greatly from person to person. What one individual find to be a reasonable and acceptable level of noise may be too loud and bothersome for another individual. Noise annoyance is the most evident and well-documented symptom of noise exposure, and it has been well studied and proven to significantly disrupt daily life, health, and well-being of a person (Heinonen-Guzejev, 2008; Ouis, 2002; Schomer, 2001; Pawlaczyk-Luszczyńska et al., 2005; Sobotova et al., 2010). Moreover, there are evidences in literature that other factors, either separately or in combination with noise exposure, determine the noise annoyance (Miedema & Vos, 2003). Jakovljević et al. (2006) mentioned that noise and noise annoyance are influenced by external factors like context and by internal or individual factors like educational background (Michaud et al., 2008), gender (Melamed, Fried, & Froom, 2004; Dratva et al., 2010), and age (Michaud, Keith, & McMurchy, 2008; Van Gerven et al., 2009).

Noise sensitivity is predictor of noise annoyance and mostly independent of noise exposure. Studies reveal that noise sensitivity has a strong effect on both health and noise annoyance (Stansfeld, 1992; Job, 1999; Griffiths & Delauzun, 1977; Stansfeld , 2009) . In general, it is a subjective level of noise perception that modifies different levels of reactivity rather than the physical characteristics of the noise itself (Nivison, 1992).The responsiveness takes into account underlying attitudes towards noise and individual tolerance of particular noises (Anderson & Miller, 2005; Keighley, 1966). Although

sensitivity to noise is generally thought of as a fixed inherited attribute, it can change over time. According to Weinstein (1978, 1980), noise sensitivity is a constant subjective characteristic that affects individual responses to environmental noise regardless of noise exposure. Numerous research has shown that noise sensitivity modulates or mediates the adverse health effects of noise exposure (Miedema & Vos, 2003; Smith, 2003; Paunović et al., 2009; Schreckenberg et al., 2010). From a psychological perspective, noise sensitivity modulates the negative effect of noise on cognitive abilities. Sandrock & Griefahn, 2009) mentioned in their study that noise sensitive individuals are more likely to be affected by noise than less sensitive people while performing a task involving active component of working memory. Additionally, noise sensitivity correlated with academic performances and some personality factors. Senese et al. (2011) determined noise sensitivity for age, sex and context. Weinstein (1978) found that students those who are noise sensitive demonstrated lower scholastic ability, were comparatively insecure during social interactions, and wanted more privacy than their peers who are less noise sensitive. Nijiland, Hartemink, van Kamp, & van Wee (2007) and Weinstein (1980) reported that noise sensitivity is linked to affective states. People who are sensitive to noise are less satisfied with their living conditions and overall quality of life than those who are less sensitive. According to Donovan and Rossiter (1982), people can be classified as either "screeners" or "nonscreeners" based on the degree of stimulation they feel and the amount of arousal caused by their surroundings. Screeners in this study are defined as having reasonably good hearing capacity and low noise sensitivity, which may result in lower arousal under any sonic situations. When compared to screeners in all acoustic situations, nonscreeners may be more aroused and possibly more dissatisfied due to their higher sensitivity to noise.

Scholars had measured the noise sensitivity with different instruments. One of the most often used tools for determining noise sensitivity is the Weinstein Noise Sensitivity Scale (WNSS). However, like other noise perception-related protocols like the International Organisation for Standardisation Technical Specifications report protocol, which has been translated into 15 different languages are also used by different scholars (Aletta et al., 2020). But, the WNSS has been thoroughly translated and tested in Swedish (Ekehammar & Dornic (1990), German (Zimmer & Ellermeier, 1999), Persian (Mohammadi et al., 2006), Japanese (Kishikawa et al., 2009), Italian (Senese et al., 2011), simplified Chinese (Han & Wu, 2015), traditional Chinese (Fong et al., 2017),

and Hindi in India (Bhatia, 1989) for different disciplines. Many multi-dimensional structures were found in some translated versions of the WNSS, even though the original was a 21-item uni-dimensional scale with a 6-point Likert scale for each item.

Restaurant is a place where different sounds are encountered by diners. Some sounds are pleasing and some are unwanted. One of the main reasons for complaints following poor service throughout the dining experience was noise emissions (Spence, 2014; Spence et al., 2019). Duizer (2001), Spence (2014), and Woods et al. (2011) reported that background noise can influence the intake of food and drink behaviour through physiological, psychological, and physical pathways. Depending on subtle variations in the sound's physical characteristics, the surrounding environment, and the characteristics of the individual exposed to the sound, sound can evoke either positive or negative emotional reactions (Fastl & Zwicker, 2001; Alamir et al., 2019). It was found that these feelings were connected with how food was perceived (Kantono et al., 2019). Different levels and types of noise may also have an impact on how a gustatory cue is perceived. People who are stressed by noise tend to eat or drink more in a way to keep themselves distracted from that noise (Woods et al., 2011).

Williams and Short (2022) examined the association between anxiety and noise exposure in an indoor restaurant setting. They also look at the predictive power of personality traits, noise annoyance, and individual noise sensitivity on self-reported anxiety levels during restaurant dining. Using a random sample of 274 people over the age of 18, this mixed-methods survey predicts high scores in noise sensitivity and noise annoyance, which correlate with higher levels of anxiety. Additionally, the Big Five Personality traits of extraversion and neuroticism predict anxiety levels when dining out. According to the results of regression analysis, self-reported anxiety is significantly predicted by noise sensitivity and noise annoyance. Anxiety was predicted by neuroticism, but it was not specifically predicted by extraversion or agreeableness. Anxiety while dining at a restaurant was significantly correlated with conscientiousness.

A study by Alamir and associates (2020) examined how three non-acoustic factors namely gender, age, and noise sensitivity, affect food preferences in the presence of background noise as opposed to ambient background noise (with no noise conditions). Using fifteen participants scores on how much they liked the food were recorded. Age, gender, and noise sensitivity at various noise levels and types were used to explain the

perceptual relative food liking. The findings showed that relative food liking was influenced by gender, age, and noise sensitivity. Compared to men, women rated their eating preferences lower ($p=0.038$). Additionally, there was a negative correlation between noise sensitivity and food liking ($r=-0.72$, $p<0.001$). Relative food like ratings were lower among sensitive persons ($p=0.023$). Additionally, aged participants rated their relative meal liking lower ($p=0.01$).

How background noise, physical noise, and proactive customer service situational noises from managers affected customer satisfaction in the restaurant industry was studied by Yeung et al., 2021. The findings supported that physical sounds, background noise, and proactive customer service from managers in relation to situational noises all affect satisfaction of customers. Customer satisfaction remained unaffected by the combined effects of physical sounds, background noise, and managers' proactive customer service with reference to situational noises. Based on the findings, suggestions are made to restaurant managers on how to reduce manageable unpleasant noises from physical and background sounds and how to successfully implement proactive customer service to deal with situational noises (Yeung et al., 2021).

Mistar and his team (2023) aimed to look at the preferences and perceptions of customers on six acoustic types in restaurants during casual dining.They examined how these categories relate to the experience of diners and how they significantly affect their tastes and opinions when dining casually. 449 respondents who dined at two casual eating establishments in the Melaka city area completed questionnaires during business hours. According to ANOVA tests, most diners did not find the noise level to be disruptive to their conversations or negatively impact their experience. The respondents said that the noise did not prevent them from going back to the places to eat, according to the results. The results of this study could serve as a foundation for further research to classify the acoustic comfort of dining establishments.

Chen and Kang (2017) emphasized that background noise has a significant impact on diners' assessments of their acoustic comfort. It has been determined that background music, other diners' speech sounds, and the impact sounds of the tableware have the greatest influence on diners' assessments of acoustic comfort and noise perception. The acoustic comfort assessment of diners about sound sources was also influenced by a number of characteristics, including the loudness, articulation, noise level, and degree of

preference of each particular sound source. Gender and the frequency of eating out have a major influence on diners' assessments of acoustic comfort when it comes to demographic and social factors.

An experiment was carried out to examine the influence of architectural interior design, sound absorption, position in the space and number of customers in a students' restaurant at STU, Bratislava. The measurements were done to find correlation between the number of diners and noise level. It was found that the noise level was not very high and ranged in most of the time at 70 decibles (Zelem et al., 2015).

In light of acoustic comfort and performance, the purpose of the study by Mistar et al., 2020 to determine the Malaysian restaurant classification framework. The primary goal was to clearly define various restaurant classifications that may have an impact on human psychoacoustics. The critical literature studies covered in the study created a conceptual framework for categorising restaurant location typologies and guests' acoustical preference.

The study on the degree of vocal power and crowd noise among diners in major Chinese college canteens was conducted. Two typical Chinese college canteens were used for the measurements. The noise levels at canteens during mealctimes ranged from 61 dBA to 73 dBA. Although there was a significant association between the number of occupants and the noise level, it was observed that this relationship went beyond the simple superposition of sound sources with equal intensities. During the dinner, the Lombard effect and the speech ratio were important factors. The practical value of 1/3 was significantly more than the typical speaking ratio of 0.12. A vocal power level prediction model in a crowd noise was introduced into Chinese college canteens. This model took into account both direct and reverberant sound energy (Wang et al., 2021).

Novak, Lopa, and Novak (2019) in a fine dining restaurant assessed the restaurant servicescape's variable sound pressure level (volume). Four conditions—ambient noise, ambient noise plus soft classical, ambient noise plus comfortable classical, and ambient noise plus comfortable but slightly loud classical music were used in the study also to examines the subject's sensitivity to noise and how it affects their mood and approach or avoidance behaviour. Mehrabian and Russell's (M-R) (1974) environmental psychology model served as the basis for the study's model. WNS was used to measure

the participants' sensitivity to noise. In the different experimental circumstances, significant correlations were found between sound pressure levels, noise sensitivity, mood (pleasure and arousal), gender, and behavioural purpose in connection to repeat patronage and communication skills.

To and Chung (2015) presented a mathematical model that characterizes the background noise level in restaurants together with a territory-wide noise survey of restaurants in Hong Kong. While the mathematical model showed that the background noise level in restaurants primarily depends on the occupancy density, the measured noise levels showed that restaurant noise ranged from 66.7 to 82.6 dBA with a mean value of 73.9 dBA (SD = 3.81 dBA). Further two sets of noise measurement data from different restaurants were used to validate the model. The noise measurement time record demonstrated that as occupancy density rises, noise level variation falls. In an extremely noisy setting, customers increase their voice to make their communication fruitful.

2.7. Research Gap

The extent of literature review on sensory marketing suggested that the marketing experts have started the use of different senses to make an effect on the responses of the audiences. Sound is a very strong sensory element that it can complement and sometimes over power the visual elements of an environment (Krause, 2008). It is also realized from the review of literature that the soundscape of urban public spaces, such as open squares, underground spaces, residential neighbourhoods, hospitals, schools, and historic streets etc. are well researched through sociological and psychological approaches (Kamenický, 2014; Chen & Kang, 2015; Aletta et al., 2023). Studies investigating soundscapes were carried out by different researchers in different fields (Axelsson et al., 2010; Nilsson, 2007; Spence, 2015; North & Hargreaves, 1997; Sterne 1997). However, most of these studies have focused purely on soundscapes in urban parks, spaces and offices. Restaurants and dining spaces also forms a vital component of urban public spaces. The sound in the restaurants influences patrons' dining experience (refer to Section 2.4). The quality of the interior acoustic environment influences how comfortable diners feel about their entire dining experience (Tarlao et al., 2021; Steffens et al., 2021). The evaluation of acoustic environment affects customers' overall satisfaction with the restaurant and influences their choices for revisit, repeat and recommend. This signifies the need for some more scientific works in this field. Very few of the works on customers'

satisfaction and dining experience have been done with respect to restaurant soundscape (Wilczek et al., 2019; Lindborg, 2016; Frid, 2013; Rychtarikova et al., 2011; Novak et al., 2010).

While existing literature speaks on the role of soundscape in influencing diners' experience, the Indian perspective on this topic is less explored. Existing studies, discuss the role of soundscapes in enhancing customer satisfaction, food perception, emotions, mood and noise control during meals in western and east Asian cuisines and settings (Steffens & Weinzierl, 2023; Din et al., 2020; Wang et al., 2021; Novak et al., 2010). It is found out that architectural, socio-cultural aspect, styles of the Indian dine out settings remain unexplored. In the Indian setting there are wide varieties of eateries with vivid environment catering to different dining needs of customers from upscale premium restaurants to roadside *dhabas* and day-night operational restaurants. As outlined in the initial part of this chapter, acoustic, sensory marketing has gained importance from academicians in India, but somewhere the psychological aspects of soundscape clubbed with marketing are yet to be popularized. Moreover, concerning the Indian demographic, how diners conceptualize the sound environment, their perception toward dining experience and food taste have not been systematically examined. Therefore, delivering a positive service experience from the aural aspect is pertinent in the hyper-competitive restaurant industry.

There is a scope for exploring thoroughly the extent to which background music may serve to offset and reduce existing negative mood states like frustration, anxiety, and depression during the course of the consumer's stay within the service environment (Johansson, 2010; Grazian, 2004). Previous research has shown the impact of background music on customer behaviours in restaurant as well as in other retail settings (Jain and Bagdare, 2011; Andersson et al., 2012). Only limited studies could be traced which focus solely on music and customer satisfaction with respect to dining experience (Leonidas et al., 2024; Wang, 2013; Mandila et al. 2012). Since the emphasis has shifted from the customer and services to the consumer experience and sensory marketing, research in this area has become essential (Achrol & Kotler, 2012; Roy, 2017). There aren't many Indian research that examine the connection between music and food intake and experience, and those that do exist are conducted from a variety of angles, primarily from the agricultural perspectives (Joshi, 2022; Bhalerao et al., 2016).

Furthermore, there is a dearth of studies exploring the relationship between preferences for Indian cuisine and cultural sound preferences. It is intuitively realized that the cultural background and geographic location of individuals and groups appear to be important factors in a soundscape inquiry (Leonidas et al., 2024; Aletta et al., 2023; Wen et al., 2020; Marković et al., 2021; Meng et al., 2017). These factors have the potential to significantly impact how people interpret sound environment and events. However, studies discussing important issues like how these insights might be used in Indian contexts while taking infrastructure and cultural issues into account could not be located. India is vast and diverse in its culture with every state having its own uniqueness. There is a popular saying that the Indian culture is so diverse that across every river it takes a changed form. The necessity for localized studies examining the connection between Indian eating experiences and soundscapes is highlighted by this research gap. An important component of the ethnic restaurant is the atmosphere. Local consumers view it as an extension of themselves and a means of showcasing their own culture (Josiam et al., 2007). Furthermore, Andrews (2008) cited the example of Indian restaurant and clarified that the original kitchen has a connection to the ethnic restaurant's overall ambiance. To create a truly local ambiance, the restaurant should include Indian glassware, crockery, cutlery, local music, local antiques, and murals on the walls. According to Sriwongrat (2008), diners of ethnic restaurants visit them not only for the cuisine and service but also to encounter other cultures and experiences through the ambiance of the establishment. This view was supported by his findings that patrons' decision to dine at an ethnic restaurant is positively influenced by its ambiance. The ambiance of ethnic restaurants offers a variety of experiences, including novelty, adventure, authenticity, and familiarity. Ethnic ambiance's distinctive setting that resembles some exotic and acceptable culture is also influenced by an ethnic atmosphere (Lakos, 2013; Liu, 2008; Jang et al. 2011; Maharani, 2012). Muniz (2013), Robinson et al. (2019) and Lili Gai (2014) suggest future scope for studying the impact of ethnic music in ethnic restaurants. One of the limitations in Muniz's work is that it is not experimented on real setting and therefore, the author suggests research to be conducted in a real restaurant setting so that the results could be more generalized. With the rise in the growth of authentic cuisine restaurants in different geographical areas particularly in Assam, traditional cooking techniques are also reviving. These culinary experiences are serving locals, in particular, rediscovering their cultural roots. These eateries are re-establishing the relationships between communities and their heritage by bringing back

their own traditional cuisines (The Hans India, 2016). Assam a mosaic of ethnic group and communities also offers a wide tapestry of culture. Similarly, it is worth to mention that every study of Assam, official or non-official, anthropological, sociological or political, inevitably subscribe to the idea that the land is "culturally divergent and ethnically variegated" (Das, 2015). Hence, studies related to ethnicity with social, political issues (Das, 2021; Anand & Tharakan, 2018; Das, 2015; Dutta, 2003) are mostly researched but commercialization of the ethnic food and creating a customer experience while dining is not at all explored in the context of Assam in general, and the ethnic communities residing in Assam in particular.

Most of the studies suggest scope for research in live music performances in the restaurant (Kubachi, 2008; Oakes, 2000; Holt, 2010). In deciding whether to opt for live or pre-recorded music in such a setting, there are practically no research to help restaurant management in such decision making. However, the studies so far reviewed on live music are not directly related to dining experience. Further research is desirable to examine the possible impression of live music in diner satisfaction.

Another important aspect related to sound environment is noise. Studies revealed that restaurants are becoming noisier over the years (Spence, 2014; Spence et al., 2019; Spence & Carvalho, 2020). Since the human perception of noise mainly relies on the meaning of the sound in relation to its sound sources and listener who is exposed to it, it is essential to study the dimensions of soundscape in restaurant which includes noise (sound of kitchen activities, other customers talking etc.) and music (Lindborg, 2016). Moreover, no such study is evident in India in relation to soundscape and sound elements in restaurants. Noise has been studied in context of India as well as Assam, but restaurant noise and influence of noise in diners' experience has hardly been touched by academicians. There are studies conducted in Assam related to noise from engineering purview (Islam, 2017); environmental ecology (Deka, 2000; Sharma et.al 2015); domestic kitchen noise (Sangma & Kalita, 2024). Again, tools such as the Weinstein Noise Sensitivity Scale have been adapted for different regional contexts (Senese et al., 2011; Alamir et al., 2019), their application to Indian populations and dining settings has not been explored. However, Bhatia, 1989; Bhatia et al., 1989 have used and translated the WNSS in Hindi, the usage is limited to them and not widespread.

The above discussions indicate that there is a gap in the literature regarding the impact of soundscape in overall diners' experience which needs to be addressed in order to understand the role of music and noise in diners' overall restaurant experience. There are also limited number of studies that analyzed different sound sources in restaurants. Although the public discourse has focused on the economic impact of music-making events, so far, there has been insufficient focus on how to promote the social and cultural aspects of urban live music ecologies (van der Hoeven & Hitters, 2019) and acceptability of live music in restaurants. The available literature also opened up another important aspect to study is the ethnic music, the congruence between ethnic cuisine and ethnic music in restaurants in creating diners' experience. The extant of literature also revealed that there are a few studies on the influence of sound sources on diners' sonic comfort in terms of noise (Chen & Kang, 2017). Therefore, it has given a scope to study the effect of noise on influencing diners' experience.

Even though a lot of extraordinary work has been done in terms of understanding and exchanging soundscapes, gathering and documenting, harmonizing and standardizing, producing and designing, and outreaching, there is still more to be done in terms of fundamental research and especially research towards soundscape practices in restaurants (Aletta et al., 2023). The majority of the research on music as a factor affecting diners' behaviour has been conducted in experimental settings with undergraduate students mostly in universities, where the influence of other variables is controlled or non-existent (Szakál et al., 2023; Zellner et al, 2017; Muniz, 2013). Conducting controlled experiments in off-site laboratories is an effective way to understand the effects of a phenomenon. Also, before the effects are tested in a real business context, it is difficult to judge how influential these effects really are (Gustafsson, 2015). Therefore, the need of the hour is to explore the restaurant soundscape in real restaurant setting.

It is also observed from the literature review that sufficient research in the same domain has not been conducted in India, Assam could be taken as the representation of the Indian states so far as the study objectives are concerned. As such, the state of Assam has been showcasing an increasing trend in urbanization, emerging middle-class economy and the frequency of eating out in different studies (Kalita & Sarma, 2017; Khan et al., 2019). Therefore, Assam is chosen for the study to explore the restaurant soundscape in terms of diners' experience. Again, Assam being a state of India also represents a diverse

culture of its people like other states. Therefore, it would be interesting to study the relationship of the music in terms of its different communities who are residing in Assam and its ethnic themed restaurants from the perspective of congruency in creating diners' experience.