

# Filling Up on Community: Can Gas Stations Become the New Third Place?

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**Abstract** Literature on gas stations is limited, either discussed in urban planning and history or mentioned as non-places lacking social interaction. Limited research explores their potential as public spaces with social behavioral patterns. The paper aims to investigate if the new typology of gas stations in the new suburbs of Cairo, Egypt act as Third Places for its consumers and if they could act as successful public places. To explore this, a correlational study was conducted with 245 responses to a survey designed to examine the social behavioral patterns of gas station users within this new typology. The survey was designed according to the paper's criteria deduced from Jan Gehl, Project of Public Spaces (PPS) and Third Places Theory Criteria. The paper presents pioneering findings in studying the social life of gas stations in Cairo, Egypt's new suburbs. Furthermore, the study explores novel and seldom unexplored subjects of social interaction history at gas stations, a topic previously uncharted. The study found a generational gap in gas station perceptions. Younger demographics, adolescents, and young adults view gas stations as social public spaces, potentially functioning as "Third Places". However, adults perceive them as practical convenience spots. Conversely, older adults disagreed with the notion of gas stations as social hang-out spaces or "Third Places". These findings suggest that gas stations serve largely as a "Third Place" for younger people, with some adult potential but little attraction for older adults.

**Keywords** Gas Stations, New Typology, Non-Places,

Third Places, Successful Public Places, Social Behavioral Patterns

## 1. Introduction

The acceleration in life led to a paradigm shift in lived experiences and the societal relevance of gas stations. In the literature, gas stations, and related infrastructure spaces are defined as urban spaces that serve automobile services to consumers [1,2,3]. They were mentioned in the standards section in scholarly books for design purposes. They are besides, being discussed theoretically as a "non-place" infrastructure lacking social interaction, by the Anthropologist Marc Augé and his following researchers. There have also been books and references that discuss the form's evolution in its early decades due to numerous factors and conditions [4,5]. Their scant attention in theories and literature confirms and emphasizes how scientists, following Marc Augé's vision, envisioned gas stations throughout the decades [4]. On the other hand, little is mentioned of the social interaction occurring in gas stations in books and references. They were rarely studied as a potential context for social interaction and never discussed being public places having social behavioral patterns to be traced [2,6].

Modern life's rapid pace emphasizes urban spaces' importance for social interaction and psychological relief

[7]. The paper can comprehend the shift in perceptions of gas stations from references to non-places, ugly spaces, and repellent pieces, to views of them as an artifact for development and public social destinations [2,8]. Besides, gas stations were not well-known in the early beginning for their new forms and identity. These acquired changes took place over several decades and were influenced by numerous factors giving rise to the modern gas station typology. The emergence of a new gas station typology has transcended their traditional function of solely providing vehicle fuel. These stations have become multipurpose destinations with a variety of amenities, such as stores, coffee shops, fast-food restaurants, and other services [4]. The paper aims to explore if the new typology of gas stations in the new suburbs of Cairo, Egypt act as "Third Places" for its consumers. They are besides, exploring if they encourage social interaction and can be listed as successful public places. To explore this, a correlational study was conducted with a survey design to examine the social behavioral patterns of gas station users within this new typology. The paper is structured into four main sections. Section one talks about the history of gas stations and the traced social activity in the literature. Section two explains the two studied theories, the "Non-Places" theory by Marc Augé and the "Third Places" theory by Ray Oldenburg. Section three explains the methodology and the criteria used in the survey to test the gas stations. Finally, section four discusses the research findings of the social behaviors in the new gas stations.

## 2. Historical Background

### 2.1. Gas Stations' Historical Background Tracking their Social Behavioural Patterns

The history of gas stations is limited, with few researchers discussing their form change and economic impact [4,5,9]. Also, the anthropologist Marc Augé and his following researchers referred to them as "non-place" infrastructures, lacking social and memorable aspects [8]. On the contrary, gas stations have been mentioned in little books as meeting points for consumers [1,2,6]. However, it was never studied for their social role in the environment, and the behavioral patterns were never discussed or traced as an important aspect [4].

Like many other commercial architectures, gas stations have evolved due to human needs, economic factors, and marketing strategies [2,3,5]. Also, they were more than a place that sells fuel, and they achieved a famous commercial identity over time and up till now [1]. The term 'Gas Station' itself reveals the journey it took to reach the image of the gas station we know nowadays. Starting from 1885, gas used to be distributed in "bottles" in shops and markets [1,10]. By 1910, gasoline pouring needed new strategies, leading to the introduction of "Filling Stations"

as a hose-and-nozzle system for gas pumps on curbside streets [2,3].

By 1920, stand-alone urban spaces replaced the curbside pumps. Subsequently, 'the gas station was born' [2,p;5], making a remarkable change in the urban planning of land use [11]. These stations, known as "The Shed," featured a gas pump and utility building as storage. Accordingly, "The Shed" marked the beginning of the hidden social interaction in gas stations. Also, as wealthy men having cars primarily used them, gas stations symbolized masculinity over femininity. Therefore, social behavioral patterns were limited to these wealthy men who exchanged life and journal information while pumping their cars [2].

From 1920 to 1930, the "House" shape evolved followed by the "House with Bay" design, featuring gas pumps, a back house building, and a bay for car repair [3,5,11]. In parallel, after World War I and the Feminist Movement, marketers, and gas station owners began to focus on women's consumption power and marketing strategies. And because women struggled with having a toilet on the road then, the restroom or the 'parlor' was the most highlighted change in the marketers' trials in attracting women [3,6]. So, gas station owners created a "powder puff room" beside the women's restroom, featuring chairs, mirrors, and rugs. This room symbolized socialization and allowed women to socialize while fixing makeup and even engaging in hour-long conversations [2,6]. Also, gas station bays with garages opened up opportunities for men to interact and stay longer in the area [2].

In 1929, the economic depression impacted gas stations, affecting design, material selection, and marketing strategies [3,11]. So, the "House with Bay" was replaced with the new "Oblong Box," featuring wider facades, white color, and large glass scale [3,11]. Through this depression era, women's importance remained, with a focus on clean toilets. Consequently, the social behaviors created by women continued in gas stations [6]. Then, by 1930-1940, gas stations became essential for the public and the rich, shifting from a luxury to a necessity. So, as the number of consumers increased and visits increased, station employers became moderators of social life, creating a pleasant environment in the stations [2]. As Draeger & Speltzable [2] mentioned in their book "*Fill 'er Up The Glory Days of Wisconsin Gas Stations*" "*the station attendant was the social of informal communities that grow up around the interactions that occur in gas stations... Because stations were high-traffic places.... they became natural gathering places.*" (p:36).

During World War II, in 1940-1950, gas stations faced reduced operations due to shrinking gasoline demand [5,11]. Accordingly, after the war, major oil companies and independent owners competed to compensate for their losses [2,5,11]. By 1947, a *Californian independent operator named George Urich built the first self-service gas station*" [1, p;29], allowing consumers to serve themselves with gas and other services. This concept became the "Gas-A-Teria" and witnessed a huge success

[11].

During the 1950-1970 decades, gas stations continued facing significant losses due to World War II and the Israeli-Arab War [1,6,11]. Accordingly, the "Box design" remained the top choice, with a focus on toilet cleanliness [5,6]. Besides, the feminist movement and the increased wars made the market more accessible for women. Along with the events, women's interest shifted from being only a "Housewife" to being a "working woman" as well [12]. This led to the birth of the "C-Store", the convenience store in the self-service stations. The rise of the "C-Store" in gas stations aimed to feminize the use of gas stations and attract female drivers [6]. It sold essential supplies like milk, bread, snacks, and tobacco. For that reason, it was designed to serve women on the go, especially when the number of working and driving women increased [1,6].

In the following 1970-1990 decade, gas stations' history remained unchanged due to the war crisis, leading owners to generalize the convenience stores in all gas stations [5]. Accordingly, the C-store became the main star of each station, and the loop was fulfilled, as gas stations were officially serving humans and automobiles [1].

Starting from 1950, there was little literature on social life in gas stations. Also, C-stores' success was influenced by the feminist movement and the rise of convenience stores. So, there must have been social behavioral patterns to be traced. However, gas stations were not extensively studied in terms of social behavioral patterns, with a focus mainly on urban and design aspects [4]. Also, despite creating commercial and social patterns, gas stations were never a destination by themselves through the past decades and tended more to be an "on-the-go" service [2].

Finally, each decade circumstances have significantly influenced the societal environment, with the design of gas stations, the economy, and the direction of marketing strategies influencing social behavior patterns. Although there is limited literature on social patterns in gas stations, some patterns can be traced, highlighting how they symbolize social interaction and challenging Marc Augé's view that gas stations are "Non-Places" lacking social or memorable aspects.

### 3. Theoretical Framework

#### 3.1. Marc Augé's Theory of "Non-Places"

In his book *"Non-Places: Introduction to an Anthropology of Supermodernity"*, published in 1992, Augé described the term Supermodernity as an excess of three factors, excess of "time, space, and individuals" [13]. He clarified that these three excesses were "mediatized, spatialized and experienced" [14, p;15] in the spaces he called "Non-Places" which are classified as contrary to the "Anthropological Places" [14,15]. Also, he categorized these non-places as places that have no "social or

emotional bond" with their users, calling them "*the spaces of circulation, communication, and consumption*" [14, p;15]. The term "*Anthropological places*" refers to places having identity, relations, and history, and they are categorized as spatial and social places where individuals can create a memory [13,14,15]. So, an Anthropological place is "*a space where identities, relationships, and a story can be made out*" [14, p;16].

Augé illustrated the term "*Excess of time*" or "*excess of simultaneous events*", as the ability of many events to occur and overlap simultaneously in different places, besides the speed of the flow of information and images shared between people in no time [13]. While, the "*Excess of space*" which results from the excess of time, means overexposure to the outer world, "*the shrink of the planet*", and the availability to be on the opposite side of the planet with little effort [13]. Finally, the "Excess of individuality" is the result of supermodernity and the excess of time and space. For Augé this excess of individuality is the contrary result of the openness happening to the planet, and it is the excess of lonely screen time, the excess of long distanced workplaces, and the excess of working hours [13].

According to Augé "non-places" are frequent locations for "*temporary dwellings*", exemplified in hotel chains, hospitals, railways, transport stations, supermarkets, airports, holiday clubs, refugee camps, retail outlets, slot machines, and much more [14,15]. He illustrated that these places are common in communicating "*wordlessly*" only "*through gestures*", where texts, signs, and screens are the medium between the individual and himself, other individuals, other spaces, and other times [14,15]. Accordingly, they deal with the individual as a number rather than a person, creating a new version of the individual called "*the average man*" or "*an image of himself*" that is confined only to the role and directions of the place [15]. Also, he explained that non-places failed to create a real identity of the individual and that the individual never creates a memory in them. He only experiences the "*actuality*", unlike the anthropological places that create memories and relations easily [14,15].

In parallel, Augé affirmed in his later writings that spaces he mentioned being non-places like "airports, hotel chains, motorways, etc." can be experienced as places and non-places at the same time, according to the actor consuming the place [14]. He described places and non-places as being "*relational, in process and context-dependent*" [14, p;20], declaring that they are in "*opposed polarities*" that spin around each other [15, p;79].

However Augé's writings about "Non-Places" were adopted by many scientists as a theory rather than an ethnographic exploration of Contemporary France. Its impact went viral in most of the "*humanities and social sciences*" [14, p;17], and accordingly, these non-places were never designed with much attention and consideration to the public social role they could play in the city [4]. However, later research has shown that non-places can be

successful public spaces that host social interaction, creating memories and qualities, proving that they are not necessarily isolated spaces but can act as attraction points for social interaction [16].

Furthermore, much research is being conducted, which has resulted in the decrease of Auge's Theoretical "Non-Places," such as shopping malls, which have been studied over and over by various urban sociologists, demonstrating their impact on society as useful public places for each user [4,17,18]. Supermarkets are proving to be effective gathering spaces for large numbers of consumers [19]. However, limited research has explored gas stations' social artifacts, focusing only on their urban design and historical approach [4].

### 3.2. Ray Oldenburg's Theory of Third Places

Ray Oldenburg and Brissett (1982) were attentive to the loss of informal public life in America, especially after World War II [20,21,22,23,24,25]. They therefore talked about how a lack of communication damaged Americans' sense of belonging explaining that interaction is what fosters a sense of belonging. Accordingly, they highlighted the need for informal public spaces for Americans, to combat the stressful work life and traditional home activities. The informal public space Oldenburg and Brissett advocated for is not a new idea, but an old one that was disappearing in the new rapid living [25]. Thereby, they emphasized how "Third Places" improve society and the standard of living for citizens by providing social advantages and a sense of community [20,26].

Later, in his book "*The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of A Community (1999)*", Oldenburg described "Third Places" as "*the core settings of informal public life*" away from "Home" the first place and "Work" the second place. He illustrated it as a "*generic designation for a great variety of public places that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work*" [22, p:16]. He characterized these third places by eight characteristics as a reference to consider any place a third place. Accordingly, third places should be on "Neutral Ground", where people can enter and exit without difficulty and where they feel safe and comfortable. It is an unimpressive plain place that feels like home [22,23]. It has no prerequisite membership, and everyone is welcome without asking for their social status. Conversation is the main activity in the place and the general mood should be cheerful, where personal problems should be put aside [22]. It must have "Regulars" who frequent the place, make it familiar, and play the host most of the time. It should be an easily accessible place

integrated into the neighborhood, that is open all day long. It is a "Home away from Home", where the original home is important for physical rest, while the third place is the home for spiritual rest and where the "Regular" acts like being at home [22].

By highlighting Oldenburg and Brissett's idea about "Third Places" as being "*Dynamic*" and "*changing with the shifting patterns of lifestyle*", we would revisit that new places had been explored as emerging third places, due to the emergence of the media and the internet, and the disappearance of boundaries between work and home [20,26]. These new places were explored from a broader vision contemplating the evolving lifestyles and personal requirements. Examples such as art museums, libraries, homes, festival spaces, parks, online games, shopping centers, taverns, fast food restaurants, etc, all were explored acting as Third Places [12,20,21,24,25,26,27]. Additionally, Slater and Koo investigated the possibility of art venues serving as Third Places, proposing that the "Project for Public Spaces" is the new, modified criteria of "Third Places" but with a "*contemporary perspective*" that would cooperate with the evolving patterns of lifestyles [26, p192, 25].

## 4. Methodology

Considering plenty of available land, the construction of the new typology of gas stations has accelerated in Egypt along with the recent growth of new suburban districts. These new gas stations provide more purposes than fuel and have become multipurpose consumer hubs. Furthermore, the COVID-19 pandemic has prompted predictions of long-term changes in plenty of fields promoting adaptive planning for cities [28]. In Egypt, citizens were allowed to gather in public spaces, regardless of the manner or quantity [29]. Accordingly, the emergence of gas stations as social hubs was unintentionally aided by the COVID-19 pandemic. Gas stations became a norm for social interaction, "hanging out", as they were among the few open areas left during lockdowns. Besides, urban population growth increases the demand for goods and services, allowing businesses to grow and proliferate [30]. Consequently, this trend was further enlarged by the rapid variation in the services served by gas stations. Moving beyond the traditional gas station services offerings, the new gas station typology now encompasses a diverse range of amenities, including supermarkets, fast food restaurants, coffee houses, pharmacies, barber shops, co-working spaces, clothing stores, gift shops, etc. This transformation has positioned gas stations as multi-purpose destinations away from pumping your car.

**Table 1.** The list of criteria the paper deduced in the survey

Third Places Criteria	<ul style="list-style-type: none"> <li>• No rules for accessing the place and for hangout time.</li> <li>• A low profile (not a fancy place) and having a homely cozy feeling.</li> <li>• Conversation is the main activity.</li> </ul>
Common Criteria	<ul style="list-style-type: none"> <li>• Everybody is welcome in the place.</li> <li>• The general mood is nice.</li> <li>• A lively public realm opens 24/7 all year.</li> </ul>
Jan Gehl and PPS Criteria	<ul style="list-style-type: none"> <li>• Protection against unpleasant sensory experiences? (Noise/glare, Pollution)</li> <li>• Opportunity to walk/stand, stay/sit, talk/listen.</li> <li>• The design of the station: <ul style="list-style-type: none"> <li>✓ Considering human scale?</li> <li>✓ Has shades?</li> <li>✓ Considering climate changes?</li> <li>✓ Have a good design/View/Vegetation?</li> <li>✓ Cleanliness of the place.</li> </ul> </li> </ul>

Because in the case of experiments and surveys, the sample has to be representative of the overall population [31]. The research employs a correlational survey design, aiming to generalize the findings of the studied phenomena. Accordingly, an online survey was conducted to reach a wide sample of the public. Random sampling was employed, considering the need to cover the age groups specified in the survey and roughly balance the replies by gender. The survey is tailored to investigate whether the new typology of gas stations in the new suburbs of Cairo, Egypt act as Third Places for its consumers. In addition to testing if they are classified as successful public places, researchers have developed and studied various frameworks as practical applications for designing successful public places like Jan Gehl, which offers three “protection, comfort, enjoyment” criteria [32]. Besides, Project for Public Spaces offers a broader scope for testing a public space based on “comfort & image, access & linkage, uses & activities, and sociability,” considering human behaviors.

To address the two research questions, the survey instrument used a theoretical framework with two scales, macro scale and micro scale. The macro-scale focuses on urban and architectural aspects, using Jan Gehl 12 Quality Criteria and the Project for Public Spaces Criteria. While, the micro-scale focuses on the behavioral patterns connected to these social spaces, integrating Ray Oldenburg's Third Places theory.

By comparing the characteristics of Third Places, Project for Public Spaces (PPS), and Jan Gehl's criteria, the paper tackled commonalities and categorized them into three groups. The first group was for the “Third Places” characteristics, the second group was for the common characteristics between Third Places and “PPS and Jan Gehl” criteria, and the third group finally was for “PPS and Jan Gehl criteria” characteristics (as shown in Table 1).

The paper aimed to bridge the Third Places Theory, Jan Gehl 12 Quality Criteria and Project for Public Spaces (PPS) frameworks. However, the paper focused on the

fundamental criteria of the Third Places Theory, with selection to relevant elements of Jan Gehl Quality Criteria and PPS criteria. The selection was based on its relevance to gas station facilities, to create a comprehensive structure for examination (as shown in Table 1). The survey concluded with an open-ended question for any further experiences the respondents experienced.

The list of criteria the paper deduced from Jan Gehl, Project of Public Spaces (PPS) and Third Places Theory Criteria, addressed in the survey.

## 5. Findings

This section presents 245 responses of respondents' demographic information, descriptive statistics, one-sample t-test and two-sample t-test, and ANOVA analysis to answer the developed questions. Moreover, SPSS 27 and STATA 17 are used to conduct all the statistical analyses necessary to test the developed questions.

### 5.1. Respondents Demographic Responses

The survey appears to have a balanced gender distribution, with nearly equal numbers of female (51.43%) and male (48.57%) respondents. It attracted a relatively young demographic, with the largest proportion of respondents representing adolescents (23.27%), younger adults (26.12%), and adults (21.22%) age groups. While the older adults age resembled (29.39%). This could be due to the nature of gas station convenience places that tend to attract younger consumers. A significant portion of the respondents (43.67%) are still students. This aligns with the findings on age and suggests that the survey may have targeted college students or young adults. The largest income group is "still a student" (41.22%), followed by "More than 20,000" (34.69%). This further reinforces the notion that the survey captured younger people.

### 5.2. Tailored Demographic Responses

Most respondents (55.92%) visit gas stations 1-2 times per week, indicating fairly regular visiting behaviors. Many respondents (38.37%) spend more than two hours at gas stations, excluding gas pumping. This suggests that gas stations are not just for refueling but also public hanging-out places. Besides, a significant portion of respondents (45.08%) visit gas stations even when they do not need gas, followed by (40.5%) responses recording visiting “sometimes” without gas needed. This highlights the role of gas stations as hang-out public places.

### 5.3. Gas Station as Third Place/ Successful Public Place

To investigate the research questions, the survey responses were categorized based on classified age groups. This aided in examining the perception of each age group of the new typology of gas stations. The analysis focused on three key variables with these age groups:

- Key Variable 1: Frequency of Visits +Hangout Time + Visiting without Gas Needed.
- Key Variable 2: How they perceive the gas station (Using Criteria Questions)
- Key Variable 3: Why do you hang out in the gas station? , Main activities? and the Most Useful Service in the Station?
- Key Variable 4: Paper Observations from the open-ended question responses.

#### 5.3.1. Key Variable 1: Frequency of Visits + Hangout Time+ Visiting without Gas Needed

The analysis revealed a significant difference between the responses, dividing them into two age groups: younger demographics (adolescents and young adults) and older demographics (adults and older adults). The findings show that 80.7% and 78%, respectively, of the younger demographics visit new gas stations once or twice a week (as shown in Table 2). Additionally, 79% and 68.8% of the younger demographic visited the station for longer than two hours (as shown in Table 3). Furthermore, 82.5% and 68.8% of them visited gas stations even though they didn't need gas (as shown in Table 4). On the other hand, older demographics have balanced responses for frequencies of visiting new types of gas stations (as shown in Table 2). Adults recorded balanced replies between “never spend time beyond filling up” to “1 to 2 hours”. In contrast, 76.4% of the older adult respondents have never spent time beyond filling up their cars (as shown in Table 3). In addition, 55.8% and 63.9% of the older demographics respondents, sometimes visit new gas stations without the gas needed (as shown in Table 4). In conclusion, the new typology of gas stations is considered a social public space “hanging out place” from the perspective of younger consumers (adolescents and young adults) in comparison to older consumers (adults and older adults).

**Table 2.** Tabulation of Q5: Frequency of Visits by Age Groups

	14-17	18-25	25-35	>35	Total
Less than 3 times per month	4	5	19	29	57
3-4 times per month	7	9	16	19	51
1-2 times per week	46	50	17	24	137
Total	57	64	52	72	245

**Table 3.** Tabulation of Q6: Hours Spent at New Gas Station by Age Group

	14-17	18-25	25-35	>35	Total
Never spend time beyond filling up	3	7	19	55	84
One to Two Hours	9	13	28	17	67
More than two hours	45	44	5	0	94
Total	57	64	52	72	245

**Table 4.** Tabulation of Q7: Visiting Without Gas Needed by Age Group

	14-17	18-25	25-35	>35	Total
No	2	4	8	22	36
Sometimes	8	16	29	46	99
Yes	47	44	15	4	110
Total	57	64	52	72	245

### 5.3.2. Key Variable 2: How they Perceive the New Typology of Gas Stations (Criteria Questions)

In analyzing the survey questions responses concerning the age group using the ANOVA, the four survey questions of “Easiness of access, welcoming atmosphere, design and vegetation influence, and cleanliness of the gas station” show a p-value  $> 0.05$ , suggesting there is no statistically significant difference between the age groups in these responses. While, hangout time, the feeling of coziness, opportunities for social interaction, welcoming atmosphere, social interaction, unpleasant experiences, and climate change consideration show a p-value  $< 0.05$ , indicating a statistically significant difference between the age groups in responses (as shown in Table 5). Age seems to influence how people answer these questions. Accordingly, they were analyzed by each age group.

The survey responses analysis in the “Easiness of access, welcoming atmosphere, design and vegetation influence, and cleanliness of the gas station” revealed a neutral overall perception across all age groups on their effect on choosing to hang out in a station. Accordingly, further classification with age was not necessary. It suggests that respondents believe these factors have a neutral impact on the gas station they choose to visit.

As shown in Table 5, in the “Hangout Time”, from 1 (not a place to hang out) to 3 (no restriction), the mean scores recorded the highest of “2.8” and “2.68”, in the adolescents and young adults respectively. Then the mean score declined with the increasing ages reaching “1.76” in the older adults age, indicating that younger ages spend more time hanging out in gas stations. The “The Feeling of Coziness”, on a scale from 1 to 5, recorded a “3.86” and “3.43” mean score in the adolescent and young adult age respectively, followed by a slight decline, reaching a “2.55” in the older adults age. Accordingly, the result indicates younger ages perceive more feelings of coziness compared to older groups. While, in the “Opportunities for Social Interaction”, on a scale of 1 (no opportunities) to 3 (many opportunities), the mean scores are positive ranging from “1.76 to 2.84”, adolescents recorded the highest mean score of “2.84” followed by a decline, reaching “1.76” in the older adults age. Moreover, there's a downward trend in the mean scores with increasing age, suggesting younger age groups perceive more opportunities for social interaction compared to older groups.

In the “General Atmosphere”, on a scale of 1 (quit and still) to 3 (busy with activity/conversation), the mean scores are also positive ranging between “2.24 and 2.58”. Similar to opportunities for social interaction, there's a slight downward trend in the mean scores with increasing age. The findings support the notion that gas stations are filled with activity and conversation from the perspectives

of almost every age group. In the “Social Interaction”(walk, sit, talk, listen), on a scale from 1 to 5, adolescents and young adults recorded the highest mean score of “4.09” and “3.43” respectively. The mean score declined with the increasing ages reaching “2.57” in the older adults age. Accordingly, adolescents and young adults perceived gas stations as areas for social interaction (walking, sitting, talking, and listening). On the other hand, adults and older adults perceived gas stations to be having limited opportunities to interact freely. For the “Unpleasant Sensory Experience” (sights, sounds, smells), on a scale of 1 (None) to 5(Frequent), the mean scores range from “2.52 to 3.46”, and the mean scores recorded the highest frequency of unpleasant sensory experience of “3.45” and “3.20”, in the adolescents and young adults respectively. Then the mean score declined with the increasing ages reaching “2.58” in the older adults age. The results of older age groups perceiving fewer unpleasant sensory experiences could be due to the lower frequency of visits and hangout time. While younger ages recorded hanging out much more time in gas stations leading to experiencing intenser prolonged exposure. The “Climate Change Consideration”, from 1 (not considering) to 3 (highly considering), the mean scores ranged between “1.92 and 2.53”. Adolescents and young adults recorded the highest mean scores of “2.53” and “2.44” respectively. The mean score declined with the increasing ages reaching “1.92” in the older adults age. Moreover, the slight downward trend in the mean scores with increasing age, suggests younger age groups might perceive the gas station considering climate change by adding some features and facilities more than older groups.

In conclusion, younger demographics (adolescents and younger adults) perceive gas stations as welcoming environments for hanging out and fostering social interactions. Since the survey replies are adequate with the conducted third places criteria in gas stations, gas stations act as Third places for adolescents and young adults. While older ages do not perceive gas stations as third places, they have negative perceptions about hanging out in gas stations. Also, in the criteria that were tested for gas stations being successful public places, younger demographics view gas stations as successful public places. However, they do not approve that the “design of the station, the vegetation, or the accessibility” to the station is an important factor for choosing to hang out in the place. Also, for the unpleasant sensory experience of pollution, noise, or glares they approved it being annoying. In parallel, they still hang out in the place. In contrast, older ages perceive gas stations as lively public places and do not report experiencing unpleasant sensory experiences in gas stations. However, they do not hang out in gas stations, perceiving them as unsuccessful hangout places, lacking opportunities for social interaction and coziness.

**Table 5.** Descriptive Analysis of different Age groups

Variables	Age groups	Obs	Mean	Std. Dev.	Min	Max
Q10 Hangout Time	14 to 17	57	2.807	0.480	1	3
	18 to 25	64	2.688	0.560	1	3
	26 to 35	52	2.096	0.693	1	3
	35+	72	1.764	0.778	1	3
Q12 The feeling of Coziness	14 to 17	57	3.86	.854	1	5
	18 to 25	64	3.438	1.097	1	5
	26 to 35	52	2.769	1.131	1	5
	35+	72	2.556	1.06	1	5
Q13 Opportunities for Social Interaction	14 to 17	57	2.842	0.414	1	3
	18 to 25	64	2.656	0.541	1	3
	26 to 35	52	2.404	0.693	1	3
	35+	72	1.764	0.847	1	3
Q15 Welcoming Atmosphere	14 to 17	57	2.579	.596	1	3
	18 to 25	64	2.297	.609	1	3
	26 to 35	52	2.346	.556	1	3
	35+	72	2.236	.702	1	3
Q16 Social Interaction Rating (walk, sit, talk, listen)	14 to 17	57	4.088	.872	1	5
	18 to 25	64	3.438	.794	2	5
	26 to 35	52	2.885	1.06	1	5
	35+	72	2.569	1.005	1	5
Q17 Unpleasant Experiences	14 to 17	57	3.456	1.103	1	5
	18 to 25	64	3.203	.995	1	5
	26 to 35	52	2.692	.981	1	5
	35+	72	2.583	1.084	1	5
Q18 Climate Change considerations	14 to 17	57	2.526	.63	1	3
	18 to 25	64	2.438	.732	1	3
	26 to 35	52	2.212	.776	1	3
	35+	72	1.917	.666	1	3

### 5.3.3. Key Variable 3: Why do you Hang out in the Gas Station? Main Activities? and the Most Useful Service in the Station?

In analyzing the three questions: Why do you hang out in the gas station? (Figure 1), main activities? (Figure 2) and the most useful service in the station? (Figure 3). The replies showed that age has a big impact on consumer responses. To comprehend these differences, the data was analyzed by age group to understand the variations.

Adolescents' highest frequencies were for the "No purchase needed" (don't have to buy anything to hangout), followed by the "strategic location" (close to regular daily routes) and the "diversity of amenities and services" (having various shops, coffee houses, and fast food restaurants enhancing the appeal for social gatherings). The main activities with the highest frequency were "Buying Convenience Items" and "Meeting Up with

Friends". They are besides, recording the "Convenience Items (Snacks, Drink, etc.)" as the most useful service to be used in the stations.

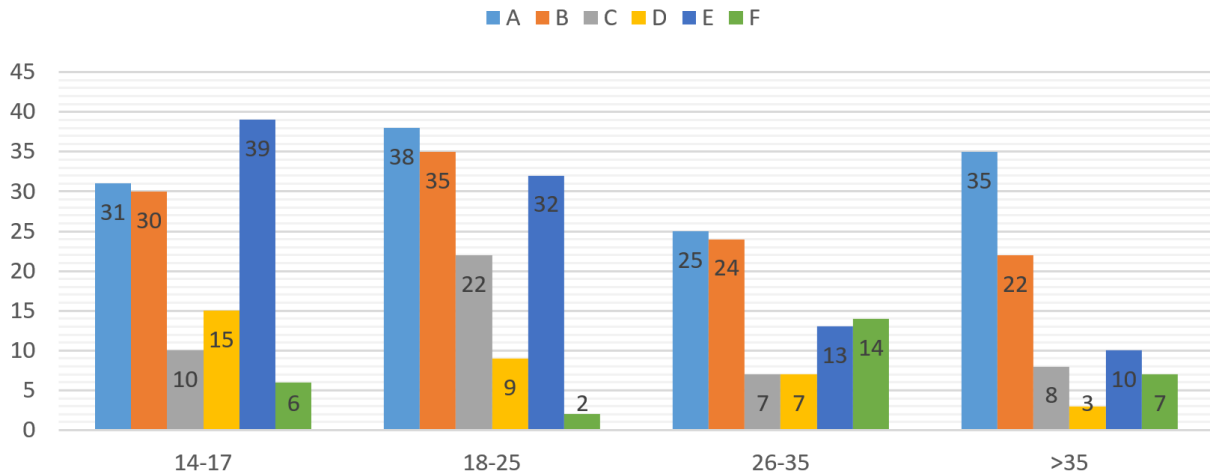
Young adults recorded hanging out in gas stations for the "strategic location" followed by the "diversity of amenities and services" (having various shops, coffee houses, and fast food restaurants)" and "No purchase needed" variables. The main activities with the highest frequency were similar to the adolescents' perception of "Buying Convenience Items" and "Meeting Up with Friends". Besides, the "coffee houses/fast food restaurants/ shopping" were recorded as the most useful service to use in the stations.

In contrast, the adult frequencies were for the "No purchase needed" followed by the "strategic location" of the station and the "diversity of amenities and services" (having various shops, coffee houses, and fast food restaurants). The main activities with the highest

frequency were “Buying Convenience Items” and “Using restrooms”. Besides, the “coffee houses/fast food restaurants/ shopping” was recorded as the most useful service to be used in the stations.

Older Adults recorded hanging out in gas stations with the highest frequency for the “strategic location” of the station. The main activities with the highest frequency were similar to the adult’s perception of “Buying Convenience Items” and “Using restrooms”. Besides, agreeing with the adults once more, record the “coffee houses/fast food restaurants/ shopping” as the most useful service to be used in the stations.

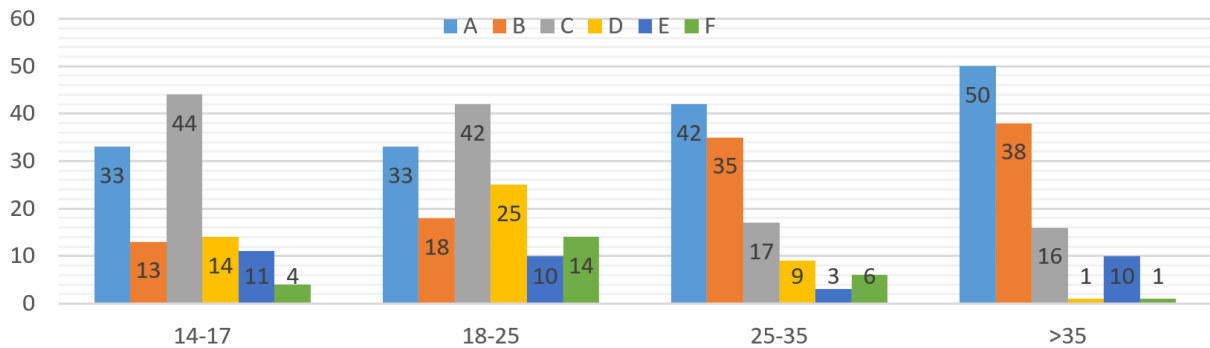
Therefore, these findings confirm the observations from the two preceding key variables. Younger demographics utilize gas stations in socializing with their friends without any obligations to purchase anything. They have the opportunity to engage in social activities like “walking, sitting, talking, and listening” and perceive gas stations as flexible hanging-out places all day and all week. On the contrary, older ages’ responses aligned with the previously identified two key variables. They primarily see gas stations as utilitarian stopovers where they can use the restroom and buy convenience items, declining perceiving gas stations as having hanging-out potential.



Where:

- A: strategic location (close to my regular daily routes)
- B: diversity of amenities and services (having various shops, coffee houses, and fast food restaurants enhancing the appeal for social gatherings)
- C: inviting atmosphere (the design and the ambiance of the station boosts a positive experience)
- D: trendy appeal (considered a fashionable spot among young adults)
- E: no purchase needed

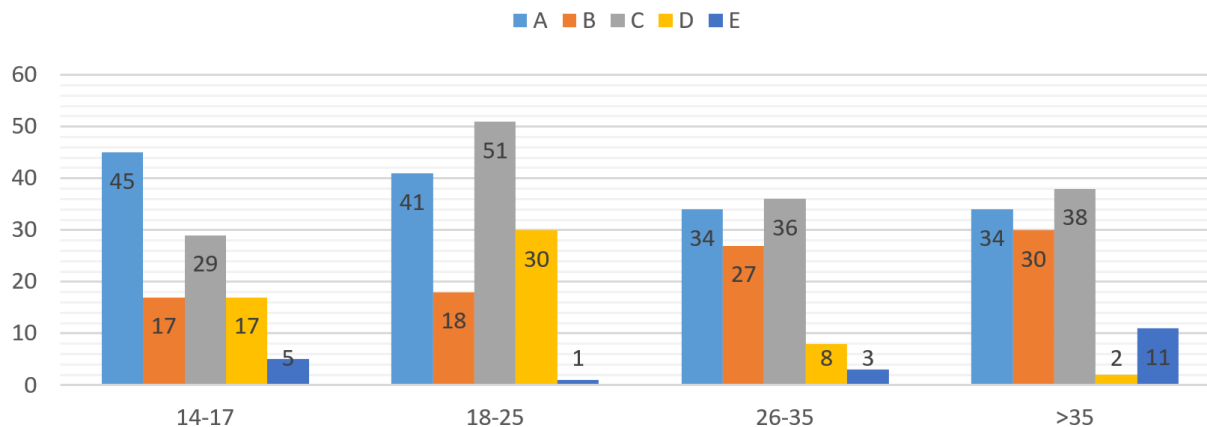
**Figure 1.** Frequencies of Q21: Why Do You Choose to Hangout in this Gas Station? (Choose as many as you want)



Where:

- A: buying convenience items (snacks, drinks, etc.)
- B: using restrooms
- C: meeting up with others
- D: online working/studying
- E: relaxing/taking a break
- F: apply all

**Figure 2.** Frequencies of Q14: Main Activity (Besides Pumping Gas), (Choose as much as you want)



Where:

A: buying convenience items (snacks, drinks, etc.)

B: using restrooms

C: meeting up with others

D: online working/studying

E: relaxing/taking a break

F: apply all

**Figure 3.** Frequencies of Q8: the most useful service (Other than gas pumping)

#### 5.3.4. Key Variable 4: Paper Observations from the Open-Ended Question Responses

The study's open-ended question revealed qualitative data that complements the initial data. These tackled experience responses were enhanced by the researcher's observations in gas stations to enrich the survey responses. Notably, adolescents confirmed the previous key variables tested. Many of the comments were for "I usually meet my friends at the station every weekend", "we hang out here as we do not need to pay money while hanging out" and "All of us are young hanging out in the station and we all know each other". In parallel, some younger adults were observed studying in the stations, suggesting an alternative utilitarian function not mentioned in survey responses. Also, some of their replies were "We hang out daily in the same station", and "We come to talk and listen to music in our cars only". Besides, adults confirmed their results as considering the place a practical convenience place. Interestingly, although older adults declined to hang out in gas stations, some were observed taking their coffee in stations. It is important to recognize that the results of this study could be impacted by situational factors, such as season or time of day. Additionally, a larger survey sample and a range of observation times could improve the results' generalizability.

Finally, from the four discussed key variables, the study revealed a significant generational gap in perceptions of gas stations. Younger demographics showed the highest degrees of agreement with survey questions, perceiving gas stations as social public spaces that promote interaction and potentially function as "Third Places". Furthermore, it demonstrated many of the qualities of a

successful public space, indicating that gas stations have the potential to become successful public spaces in the future. Conversely, older demographics provided less positive responses. Adults perceived gas stations as useful convenience places that can be used for little less than a couple of hours, declining to be "Third Places". Conversely, older adults disagreed with the notion of gas stations as social hang-out spaces or "Third Places". These findings suggest that gas stations serve largely as a "Third Place" for younger people, with some adult potential but little attraction for older adults.

## 6. The Results in the Context of Existing Literature and Theory

Returning to the Non-Places theory perspective of gas stations, it is questionable to consider gas stations as Non-Places, as they have evolved into Third Places for certain groups of individuals. Also, no matter how successful they are as public spaces, they can be regarded as such. The paper tackled the social life in gas stations through decades challenging the perception of gas stations as non-places. It highlights that gas stations have traditionally functioned as public social spaces, a role that has been understudied in academic literature or documented. Furthermore, the research indicates that gas stations may have functioned as Third Places or similar social spaces for specific groups throughout history, a role that has not been adequately explored in scholarly literature.

Consequently, by integrating the findings of the study with existing literature and theories, it becomes evident

that the notion of gas stations acting as public gathering places is not an entirely novel phenomenon but rather an extension of their historical intent, adapted by modern societal and architectural standards.

## 7. Conclusions

Previous research has rarely examined gas stations as significant contexts for social interaction and was seldom discussed as public places having social behavioral patterns. The paper aimed to investigate if the new typology of gas stations in the new suburbs of Cairo, Egypt act as Third Places for its consumers and if they could act as successful public places. Data was collected from 245 responses to a survey designed to examine the social behavioral patterns of the new typology of gas station users. Analyzing the data according to a list of criteria deduced from Jan Gehl, Project of Public Spaces (PPS), and Third Places Theory, the paper found: Yes, that gas stations can become Third Places for younger users. This aligns with the researcher's expectations. However, success as a public space is debatable. While younger users view them as hangout spots, they don't fully meet all the criteria for successful public spaces. Adults might also use them for socializing, but to a lesser extent and they do not consider them as successful hangout places.

## 8. Limitations and Future Recommendations

The study's classification of "Older Adults" needs improvement, potentially distinguishing between "elder adults" and "middle-aged adults" to capture a wider range of experiences and behaviors falling into these age groups. In parallel, this study adds to the academic's call for further research on platforms of new and developing "Third Places" integrating with the new accelerated lifestyles. These findings further the essence of the third-place theory by emphasizing the potential of gas stations to serve as public spaces, especially for younger demographics. In addition, an understanding of user demographics and interests will provide valuable insights for gas station designers and developers.

In parallel, further research needs to be directed toward highlighting the importance of human-centered spaces and their capability to enhance places according to user needs. Future research should also focus on developing design guidelines prioritizing human-centered principles. Incorporating these guidelines will facilitate the creation of spaces that accommodate human needs and lifestyles, enhancing user experiences in various settings.

The paper opens a fascinating chapter for gas stations. Could they become the next unexpected social connectors, weaving themselves into the fabric of our communities?

## 9. Definition of Terms

- Younger demographics: indicating (adolescents and young adults)
- Older demographics: indicating (adults and older adults)
- Age group classification:
  - Adolescents age (14-17 years)
  - Young adults age (18-25 years)
  - Adults age (25-35 years)
  - Older adults age (35+)

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