
UP DILIMAN SHOPPING CENTER: *Level of Patronage of UPD Faculty and Staff Based on Urban Form Attributes*

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Abstract

The University Shopping Center (SC) of the University of the Philippines in Diliman serves as the commercial core of the campus, providing several services that cater to the needs of the UP community. This study shows the different urban form attributes that affect the level of patronage of faculty and staff members of the University such as (1) distance or proximity of the academic units, (2) availability of local public transport system, and (3) responsiveness of the commercial center. Other off-campus amenities near UP Diliman also emerged as secondary options in availing the needs and services of the UP employees.

Keywords: shopping center, pedestrian, streetscape, urban form

I. Introduction

"UP Diliman Shopping Center, together with its adjacent structures as part of the service core of the University, is one of the busiest, most important nodes in the campus (Ty, 2011)."

The Diliman campus of the University of the Philippines serves as the flagship campus of the state university. This 493-hectare campus is composed of different land uses for different functions: campus core, academic and academic support units, science and technology park, resource generation zone, residential or mixed use, community services, other parks & major open spaces, and protected forest area including the arboretum. Of these land uses, the academic and academic support units cover the most land area with 27.93% of the campus (see Figure 1). This wide range of land uses within the University is planned to support each other and to serve the institution's main function, that is, to cater to the needs and rights of the Filipino people for quality and high level of education.

Education is, and should be, not confined only to the academic units. The need to support academic activities results in providing facilities and services for the needs of the students, faculty and staff of any academic institution (Cabrera, et.al., 1994). For UP Diliman, its academic

autonomy implies that the academic support facilities on-campus should be sufficient enough to provide the needs of its constituents. The need to "support and enhance its teaching, research, and public service functions" is imperative to UP not only as an autonomous academic institution but also as the state university that is known for its pursuit to academic excellence (Araneta, 2009).

The UP Diliman Shopping Center (also known as SC for the community within the campus) is built around 1970's and serves as the main support facility of the flagship campus. Its offered services include food stalls, photocopying, computer rentals, printing, book binding, bookstore, school supplies, merchandise, clothing, pharmacy, etc. It is strategically located between the academic units and the residential or mixed use zone at the northeast side of the campus. For this study, the author will analyze the level of patronage of UP Diliman Faculty and Staff to the Shopping Center based on three major factors: images of the delivery, completeness & level of exclusivity of the (services offered by) SC for the UP employees, the location of the University Service Core in relation to the different academic units of the University, and the perception of people on the pedestrian streetscapes (including spaces or road networks for walking and public transport) leading toward Shopping Center - how these components affect UP employees' utilization of the said commercial center.

II. UPD Shopping Center and the Behavioral / Movement Patterns of UP Employees

This paper aims to determine the factors related to the location of the UPD Shopping Center within the campus and the perception of the people on its capability to serve the academic needs of the UP employees and their effect on the level of patronage of Faculty and Staff of UP Diliman to the University's service core. Part of the discussion in this paper is the behavioral or movement patterns of UP employees in availing services from either the Shopping Center or from off-campus amenities. Other sub-problems to be discussed and answered include the following:

- How long are UPD Faculty and Staff willing to walk or drive towards commercial centers within and off-campus to avail of the services that they need?
- Do features of the UPD Shopping Center (in terms of its responsiveness) affect the decision-making of UP employees in availing the services that they need for their academic activities?

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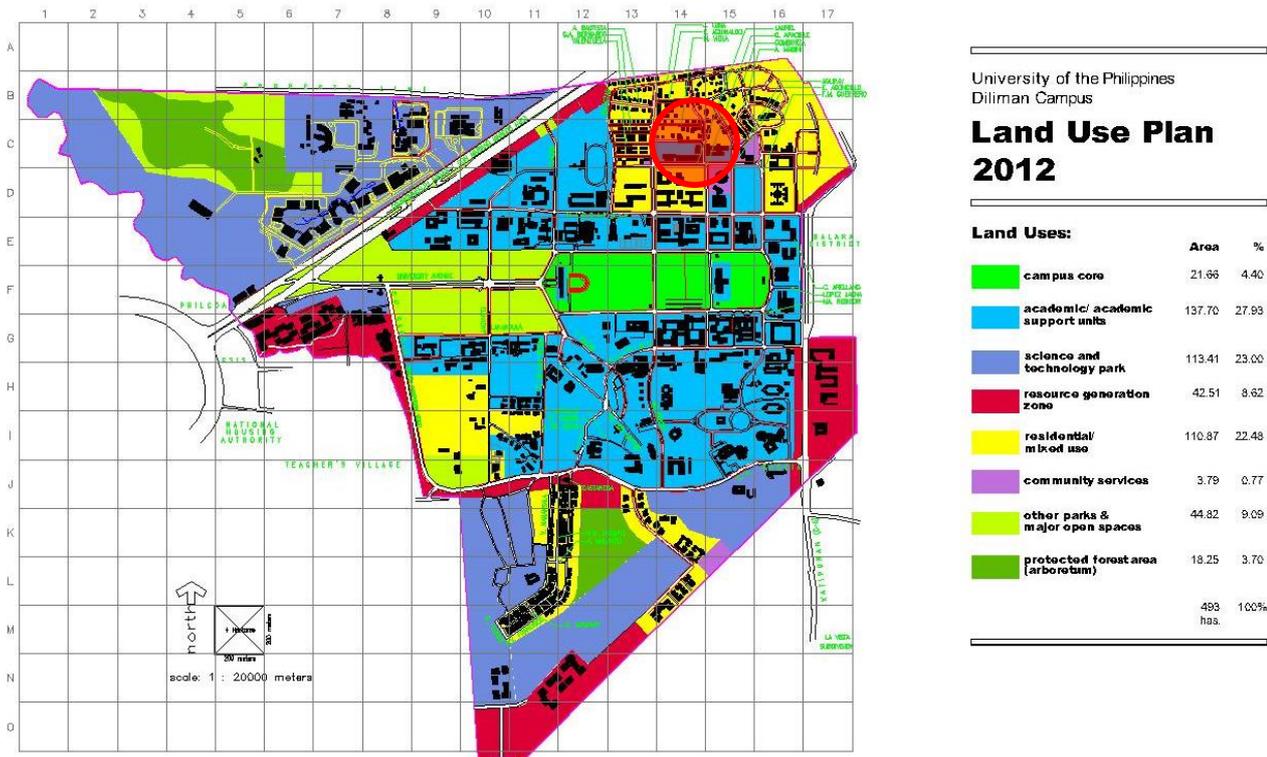


Figure 1. UP Diliman 2012 Land Use Plan. The Shopping Center is located within the orange circle (Grid C,14).
Source (Base Map): Office of Design and Planning Initiatives (ODPI), University of the Philippines System, 2012.

- What are the present conditions of the pedestrian streetscapes leading toward Shopping Center (SC), based on the perception of the UP employees, which may affect their behavior in walking or driving from an academic unit to the SC?
- Would UPD Faculty and Staff prefer to avail the services that they need for their academic activities at SC or at off-campus amenities?

In answering these sub-problems, several objectives have been set for this study:

- To verify the effects of proximity and accessibility of Shopping Center to various academic units in the utilization of UP employees of the service core;
- To determine the outdoor behavioral patterns or movement of UPD Faculty and Staff in patronizing the Shopping Center based on their perceptions to the features or images of SC and to the pedestrian streetscapes surrounding it; and
- To compare the frequency of utilization of services between UPD Shopping Center and off-campus amenities offering the same needs and services.

A. UP Diliman's Support Services as part of the University's Self-Containment

Self-containment in the UP Diliman campus can be observed through the "delivery, completeness and level of exclusivity of various forms of support services on campus". These support services affect the performance of faculty, students and staff in their various academic activities. With the thrust of UP geared towards academic

pursuit of excellence, the University should not only be self-sufficient in terms its academic units but also of its support facilities, most especially the Shopping Center as the service core in the campus (Araneta, 2009). But instead of focusing only on what the commercial center offers, it is also of equal importance to study the (1) location of the Shopping Center with respect to academic units and the (2) pedestrian streetscapes outside the establishment that may affect the level of patronage of people living, studying, and/or working in the campus.

As for the physical aspect of the pedestrian streetscapes in UP Diliman, particularly the outdoor spaces leading to Shopping Center, this study may serve as a guide for the UP Administration in determining the outdoor areas within the campus that need (or need not) to be addressed and/or be rehabilitated. This study would also benefit the planners, architects, builders, and even sociologists for their continuing education and learning as professionals.



Figure 2. The University Shopping Center in UP Diliman (viewed from the intersection in front of the entrance gate of the Church of the Holy Sacrifice)

A portion of the 3,418 (as of April 2011) Faculty and Staff (Administrative and REPS) members of UP Diliman (Amante, 2012) will be the sample population for this study. In checking the level of patronage of the UP employees to the Shopping Center on this study, the services offered by SC will be limited only to the needs of the UPD Faculty and Staff for their academic activities. Patronizing on these services will be compared to availing the same type of services offered at off-campus service facilities, examples of which are the stalls in CitiMall at Philcoa area, SM North and Trinoma Malls, etc. Also, although the top three (3) SC stalls that are often visited for the needs of UP constituents, which include photocopying shops (80%), food (71%), and internet shops (55%), based on an undergraduate thesis study (Ty, 2011) can be availed also within several academic units throughout the campus, the huge percentage of results for the said services would not defeat the purpose of UP employees going to Shopping Center for these needs.

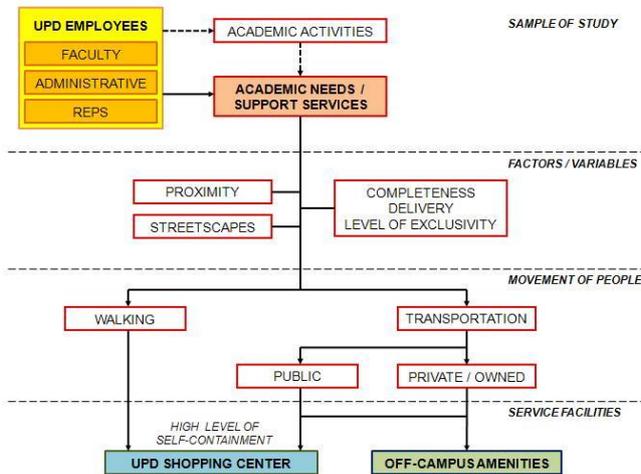


Figure 3. Conceptual Framework of the Study

B. Factors Affecting the Movement of People towards Service Facilities

The movement of people from one place to another can be determined by the amount of effort needed to transport oneself to his/her destination. There is a general rule of thumb that "people will walk six to ten minutes before they hop on a bus, dive into a subway or hail a cab" (Ramati, 1981). Another study based in a large number of surveys implies that the "the acceptable walking distances for most people in ordinary daily situations has been found to be around 400 to 500 meters" (Gehl, 1987). However, these rules may differ for "one who views the walking distance as a price paid for reaching an opportunity". Although there is no direct cost for walking except the footwear, its cost is reflected through time and physical effort that may result to inconvenience, therefore making journeys on foot usually in shorter trips (Pushkarev & Zupan, 1975).

Other important factors to consider in studying the movement patterns of people on exterior spaces are the physical elements that comprise the streetscapes. The different perceptions of people towards the environment and their surroundings can affect their behaviors and

wellbeing, that is, the "state of happiness, health, and prosperity". Physical elements such as light, forms, and their interplay can have effects on the disposition and productivity of a person (Reyes, et.al., 2000). The attributes that people see in the urban form around them have implications on their perceived time duration thus, affecting their movement patterns from one point or location to another. The "external physical environment plays a role in building and supporting the sense of time". The estimation of an individual on time may be affected by the variety in experiences or absence of sensations in urban space (Yang, et.al., 2007).

C. Methods of Gathering the Data

A survey was given to several UPD Faculty and Staff (based on their availability) from different academic units to verify their patronage to the Shopping Center in relation to the different factors that may affect their decision-making in availing their academic needs. The academic units of the respondents were grouped into three (3) zones with respect to their distance from SC (intervals of 500 meters in radius from the location of SC). Aside from distance or proximity, the public transport system within the campus and the perception of the UP employees on the Shopping Center and the streetscapes leading towards it were also analyzed to help in analyzing the results - as physical, social and symbolic dimensions must be taken into account simultaneously in understanding urban space (Manadipour, 1996).

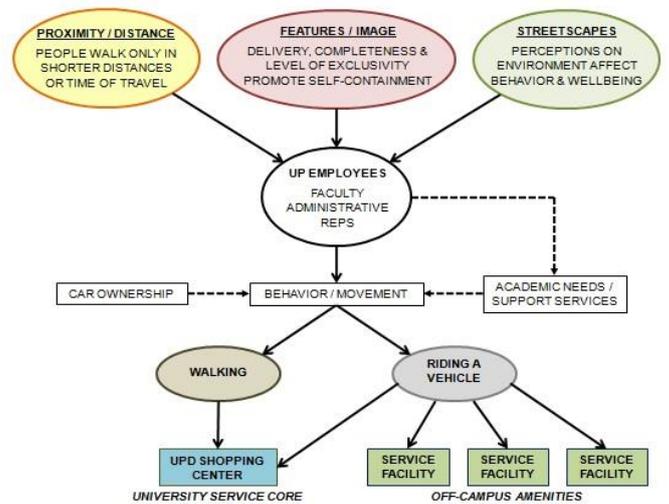


Figure 4. Theoretical Framework of the Study

Ian Bentley's *Responsive Environment* (1985) discusses that the built environment should provide freedom of choices to everyone and that planning towards a "responsive" environment should be a "product of progressive social and political attitudes" (Bentley, et.al, 1985). For the survey, the seven levels of responsiveness (permeability, variety, legibility, robustness, visual appropriateness, richness, and personalization) were used to rate the perception of the UP employees on the features or image of the Shopping Center. The final ratings verified if these levels contribute to the patronage of UP employees to SC.

Other factors included in the survey such as types of services availed by UP employees and ownership of vehicles were also analyzed. The author verified if these factors also affect the level of patronage (in terms of frequency of visit to SC) and the behavioral/movement patterns (in terms of mode of transport) of the respondents to the UPD Shopping Center.

III. Previous Studies and Related Literature

1. Spaces for Walking: Detail Planning

As defined by Jan Gehl (1987), "walking is first and foremost a type of transportation, a way to get around, but it also provides an informal and uncomplicated possibility for being present in the public environment." This type of movement requires space without interruption or external forces that may disturb the person in motion. Surface conditions or pavement on ground and difference in surface levels affect the movement of a pedestrian. Since walking requires effort, pedestrians are naturally conscious of the routes to take in going from one place to another, with preferences on direct routes and shortcuts even if these are not the safest ones. It is important to provide adequate spaces with proper materials and finishes for the pedestrian traffic, especially on areas where there is heavy concentration of walking individuals.

Aside from providing space for pedestrians, it is important to note also the safety and security of the individuals passing by. A pleasant environment provides protection from any type of danger that may inflict physical harm to anyone. Safety and security on outdoor places and streetscapes not only pertain to protection from crime and vehicular traffic but include also the protection from unpleasant or bad weather and climatic conditions. However, it is also important to allow the individuals to experience the positive aspects of the weather (Gehl, 1987).

In the Philippines, the climate conditions that should be considered are the direct sun rays (especially during noontime) and rainfall. Sun shadings and covers may be natural (trees) or man-made (sheds, canopies, covered walkways, louvers, huge structures).

2. Pedestrian-Friendly Streetscapes

There are various kinds of people living, studying, and working inside the UP Diliman campus. As a community, UP Diliman campus was designed and planned to have an efficient road network that will allow movement of its people from one place to another, whether by any means of transportation or through walking. With the provisions for elements such as pleasant surroundings, well-designed street furniture, and good maintenance among others that make its users safe and comfortable, we can say that the UP Diliman campus has the characteristic of a good street community.

To determine if a street is pedestrian-friendly, here are some of the factors that must be considered:

- there must be accessibility and permeability;
- it should be safe and inviting (characteristics of transparency and "publicness");
- it must offer comfort to users walking or passing by;
- there should have enough shade and cover through well-designed and/or well-constructed elements;
- pleasant views should be provided to the users; and
- it must be well-maintained (Galingan et.al., 2009).

Although it is deemed beneficial at times, usage of transportation may be problematic also, especially if the society excessively rely on it. It is important to have a healthy and properly functioning transportation system to have a healthy society and access to all. It is the role of the planners and builders to search "for circulation patterns that assured access for the most essential functions by travelling the least distance" (Schaefer & Sclar, 1975).



Figure 5. View of the corridor inside the Shopping Center

3. The University Experience

The self-containment of the UP Diliman community is largely dependent on its constituents or users: the students, faculty, and staff. Due to its autonomous status, UP has been independent in determining and planning its own development, whether through its function as an academic institution or through its physical environment as an extension of the academic community. The state university has its own role of providing, disseminating, and preserving everyday knowledge that are critical in the development of the entire nation. With this, all academic activities and functions within the University must be geared towards academic pursuit. However, this will only be possible if the support facilities and services are sufficient enough to address the needs of such academic activities and functions. Through the everyday participation of the UP constituents in the development, or deterioration, of facilities and services within the campus, the university experience is formed - and to sustain its image as the "national university", the self-containment of UP must be evident and strong (Araneta, 2009).

4. Utilization of University Shopping Center

The University Shopping Center in UP Diliman campus is a 1-storey structure along J.P. Laurel Street composed of stalls offering various services. The current types of goods and services found in this structure are the following: photocopying & book binding, food, computer rentals, school supplies, clothing, barber shop, beauty parlors, digital printing, blueprinting, and laundry, among others.

In an undergraduate thesis from the UP College of Architecture, a study was done to determine the patronage of UP students and faculty to SC for their needs. In 100 respondents (80 students and 20 UP employees, vendors & tenants) asked, the most utilized services in SC are photocopying (80%), followed by food (71%), internet, bookstore & school supplies (55%), clothing & pharmacy, souvenirs, UP merchandise, and laundry (Ty, 2011).

IV. Perception & Preferences of UP Employees on Service Facilities

In this study, around 500 survey questionnaires were distributed to UPD Faculty and Staff/REPS from different colleges and units within the campus. Out of the 500 people surveyed, 170 people responded while the rest of the questionnaires were incompletely filled out or discarded. The respondents were asked regarding the following factors for determining the level of patronage of the UP employees: their preferred mode of movement or transport from their academic units to SC, their perception on SC and the pedestrian streetscapes leading towards it, and their choice between the University Service Core against the off-campus amenities in availing academic needs and services. Car ownership was asked to check if it has any effect on the decision of UP employees to either walk or ride a vehicle and to either avail services within or outside the campus.

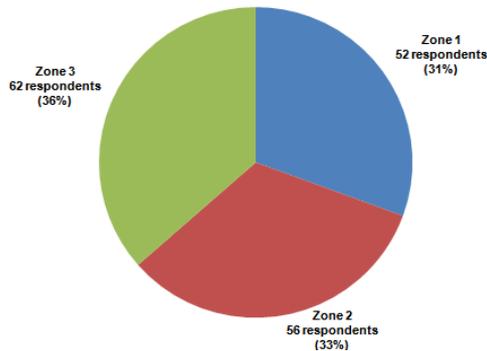


Figure 6. Distribution of number of respondents per zone

The respondents work in the following colleges/units:

- Zone 1 : College of Engineering (Engg)
National Engineering Center (NEC)
School of Statistics (Stat)
- Zone 2 : College of Arts and Letters (CAL)
College of Education (Educ)
College of Social Sciences & Philosophy (CSSP)
Office of the University Registrar (OUR)
School of Urban & Regional Planning (SURP)
- Zone 3 : College of Architecture (Arch)
College of Fine Arts (CFA)
College of Science (CS)
Office of the Campus Architect (OCA)
Office of the Vice Chancellor for Research & Development (OVCRD)

As mentioned, the features or image of the Shopping Center were rated by the respondents using Ian Bentley's Seven Levels of Responsive Environment: permeability (ease of access); variety (services offered); legibility (recognition of the structure); robustness (flexibility in use); visual appropriateness (façade or look); richness (sensory experiences); and personalization (of individual stalls). Aside from checking the responsiveness of SC, ratings were also used to determine if any of those affect the respondents' level of patronage to SC.

In verifying the effects of the physical landscape or the natural and built environment on the utilization of the UPD Shopping Center, several physical elements of the pedestrian streetscapes leading towards SC were also rated by the respondents based on their perceived effectiveness or availability. These were the following: conditions of vehicular roads; pedestrian sidewalks; trees, plants or foliage; natural or man-made sun shading elements; provision for parking slots and driveways; waiting sheds for public utility jeepneys or PUJs; view of the vicinity or surroundings; free from garbage, noise and smell pollution; and safety & security of the surroundings.

It must be noted that the survey was done during the regular semester within the academic year. But since there are classes during summer, any effect of the seasonal use of Shopping Center (may apply only for faculty members without summer classes) may be disregarded.

1. Level of Patronage of UP Employees on SC and Off-Campus Service Facilities

Results of the survey show that the frequency of visit of the respondents at the Shopping Center is usually at least monthly and weekly at the most (Table 1). The level of patronage of SC by UP employees is still relatively high as 112 out of 170 respondents (65.9%) prefer to avail their needs and services at the Shopping Center. Most of those respondents mentioned that the ease of access and proximity of SC from their colleges/units is the main reason for their choice. Other reasons pointed out by the respondents for choosing SC over off-campus amenities include convenience and cheaper prices. As for those who preferred to avail their academic needs at off-campus service facilities or amenities such as CitiMall/Philcoa, SM North/Trinoma, and Katipunan Avenue among others, variety and completeness of goods and services offered in those areas are the main reasons for their choice. Since not all services can be availed at SC, these off-campus amenities become secondary options for them.

<i>Frequency of Visit at SC</i>	
Mean	3.405882353
Standard Error	0.074391397
Median	4
Mode	4
Standard Deviation	0.969945151
Count	170

Table 1. Descriptive analysis of the frequency of visits of the respondents to the UPD Shopping Center. Ranking of choices is as follows: Daily (5 points), Weekly (4 points), Monthly (3 points), Every Semester (2 points), and Never (1 point).

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Figure 7. Portion of UP Diliman Campus Map. The campus is divided into 3 zones, namely: Inner (blue), Middle (maroon), & Outer (green) zones, with intervals of 500 meters from Shopping Center (shown in red), for survey purposes. Colored dots show the locations of academic units where the respondents of the survey are based.

Source (Base Plan): Office of Design and Planning Initiatives (ODPI), University of the Philippines System, 2012.

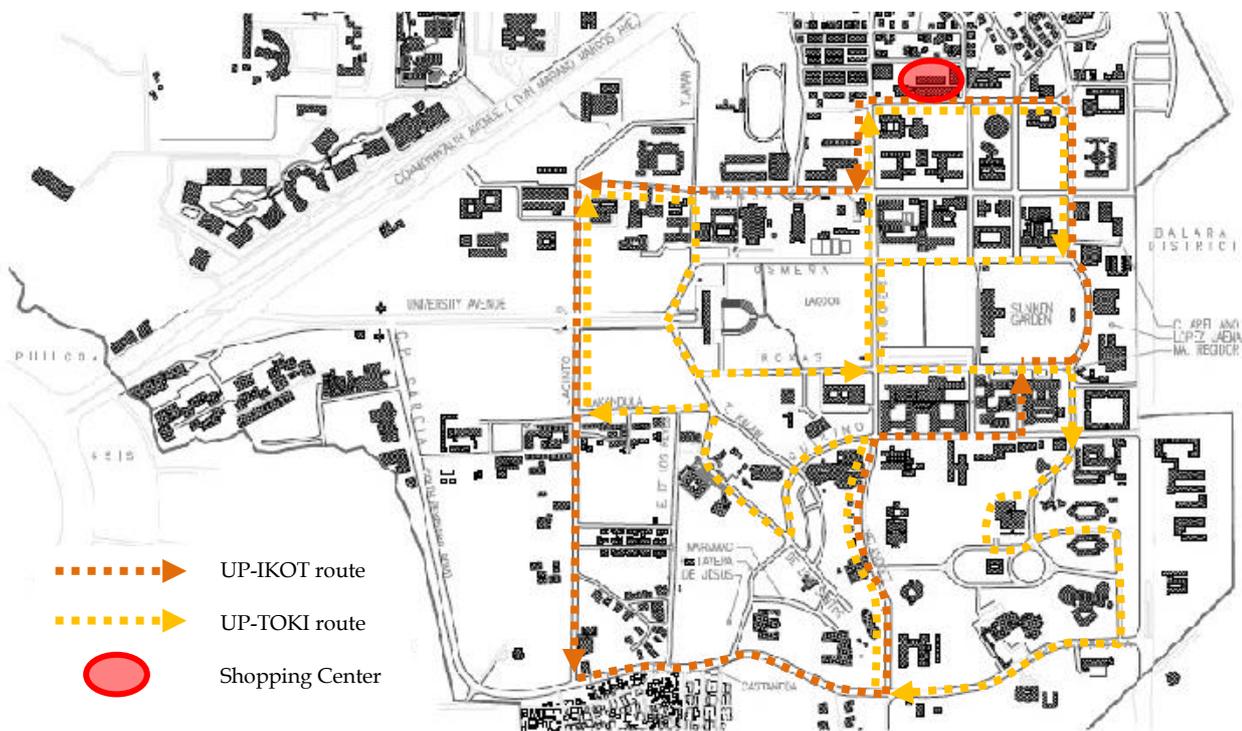


Figure 8a. Portion of UP Diliman Campus Map showing the traffic flow of UP-IKOT and UP-TOKI jeepneys within the campus.

Source (Base Plan): Office of Design and Planning Initiatives (ODPI), University of the Philippines System, 2012.

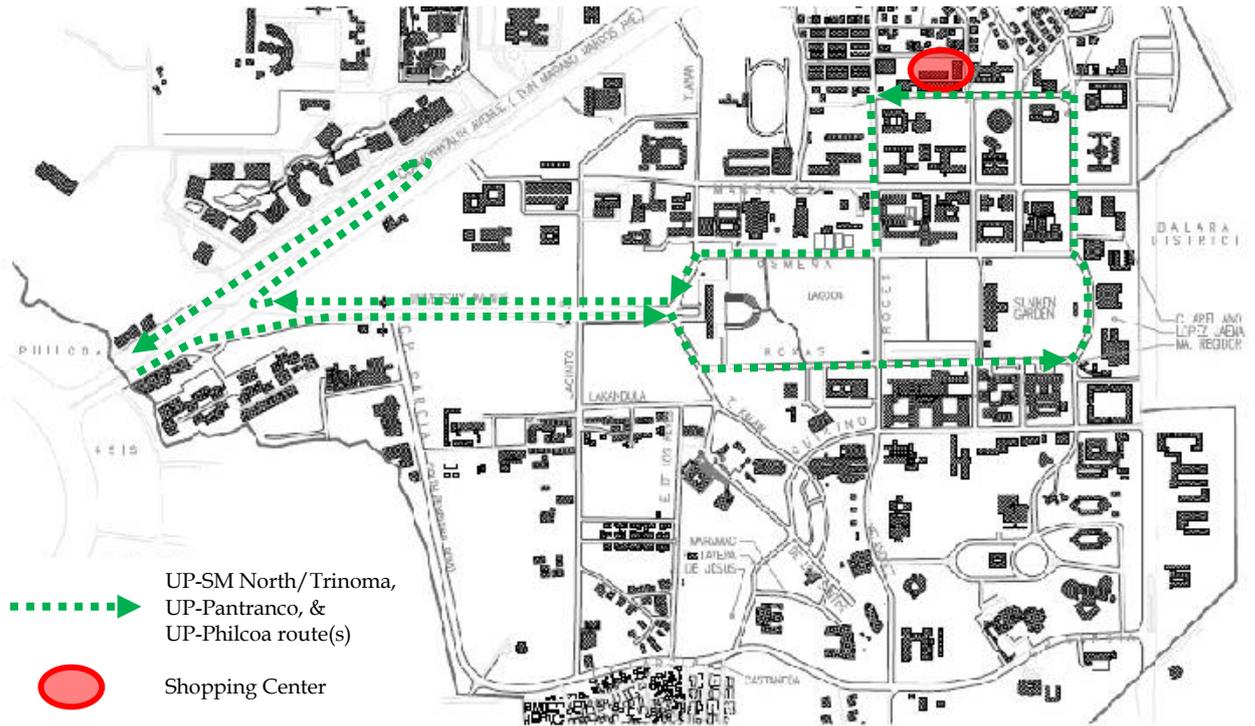


Figure 8b. Portion of UP Diliman Campus Map showing the traffic flow of UP-SM North/Trinoma, UP-MRT/Pantranco, and UP-Philcoa jeepneys within the campus.

Source (Base Plan): Office of Design and Planning Initiatives (ODPI), University of the Philippines System, 2012.

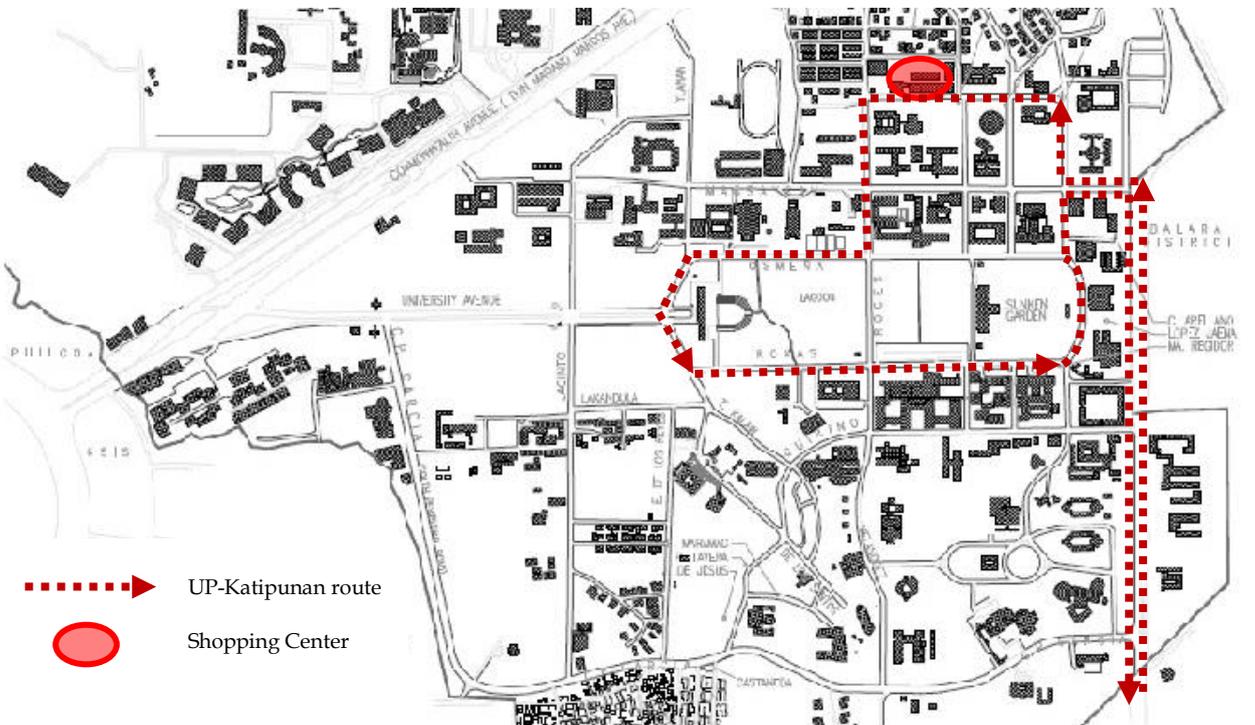


Figure 8c. Portion of UP Diliman Campus Map showing the traffic flow of UP-Katipunan jeepneys within the campus.

Source (Base Plan): Office of Design and Planning Initiatives (ODPI), University of the Philippines System, 2012.

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Figure 9. Satellite Image of UP Diliman (blue highlight) and adjacent areas, showing the location of service amenities (orange for SC, red for others) within and off-campus in relation to the Academic Oval (green highlight).
Source (Base Image): Google Earth, 2013.

Although CitiMall in Philcoa and Krus na Ligas are both within the campus premises, they are located at the outskirts of the campus and are farther from the Academic Oval as compared with Shopping Center. Various commercial and service establishments are lined up along the Maginhawa Street and Katipunan Avenue.

2. UP Diliman's Public Transportation System

The routes of public utility jeepneys (PUJs) in UP Diliman are mapped out in Figures 8a to 8c (previous pages). The UP-Ikot and UP-Toki jeepneys travel only within the campus (Figure 8a), with UP-Ikot traveling in counterclockwise route and UP-Toki traversing the opposite direction. Other PUJs have routes from the campus to several areas outside UP Diliman: Philcoa, Pantranco/MRT (EDSA-Quezon Avenue), and SM North/Trinoma to the west and Katipunan to the Southeast. All jeepney routes pass through J.P. Laurel Street in front of the Shopping Center.

It is quite noticeable on the maps shown that the PUJs with access to the outside of the campus only traverse the roads of the Academic Oval (campus core) up to the street in front of SC while the UP-Ikot/Toki jeepneys are the only ones passing through areas where more academic units are located. It is important to note also that the UP-Ikot and UP-Toki jeepneys have different routes and that the former has more regular trips than the latter. Jeepneys from Katipunan Road, upon entering the campus, will pass in front of the SC first before traversing the Academic Oval and exiting the campus (Figure 7c). PUJs coming

from the west and entering the campus through the University Avenue will traverse the campus core first before passing in front of SC, then back to the Academic Oval before exiting the University Avenue (Figure 7b).

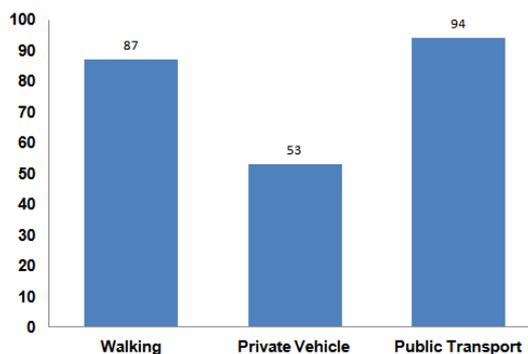


Figure 10. Preferred mode of transport of respondents going to and from the UPD Shopping Center

As shown in Figure 10 above, 94 out of 170 respondents (55.3%) prefer to take a jeepney ride from their colleges/units to SC and vice-versa. With the coverage of the local public transport system and the availability of jeepneys at almost any part of the campus, it's easier for anyone to use this mode of transport, especially for those working in academic units farther to SC. Table 2 shows that the respondents from Zones 2 and 3 (more than 500 meters away from SC) preferred to ride on PUJs upon going to the Shopping Center. The use of public transport is highest at Zone 2 where the Academic Oval is located and where routes of all PUJs pass through.

Mode of Transport	Zone			Total
	1	2	3	
Walking	47	23	16	86
Riding Owned Private Vehicle	7	17	29	53
Public Transport	14	46	34	94

Table 2. Distribution per zone of preferred mode of transport of respondents to SC

3. Pedestrians versus Riders

In reference also to Table 2, walking has been the main mode of transport to Shopping Center for respondents working within Zone 1 from SC – more than half of the combined responses for riding either their own private vehicles or PUs. Even for respondents within the 500-meter zone who own a car/van, motorcycle or bicycle, only less than half of them (7 out of 19) use their private vehicles to go to Shopping Center as more people prefer to walk due to the close proximity of SC from their units. Results show that age is not a factor for pedestrians within Zone 1, but as the walking distance increases (going beyond the 500-meter distance), only the younger ones can avail to walk. It is obvious and understandable also that as the locations of colleges/units goes farther away from SC, the number of respondents who prefer to walk decreases. It is safe to say then that the rule on walking within the distance of 500 meters as pointed out by Gehl (1987) is verified with these results. Also, we can assume that there is reliance on vehicles, whether public or private/owned, of UP employees working beyond 500 meters from SC.

Although the percentage of number of respondents relying on their private vehicles to access the Shopping Center increases as distances of academic units from SC goes farther, more respondents still prefer to ride PUs rather than driving their own transportation. Based on these findings, we can say that the availability of local public transport system within the campus affects the level of patronage of UP employees to SC. On the other hand, car ownership of UP employees may be considered as a non-factor in their patronage of SC.

Vehicle Type	Zone			Total
	1	2	3	
<i>Car/Van</i>	14	17	27	58
<i>Motorcycle</i>	2	4	2	8
<i>Bicycle</i>	3	1	6	10
No vehicle owned	33	34	27	94
Total Number of Respondents	52	56	62	170

Table 3. Data on ownership of vehicles per zone. Owned private vehicles are in italicized font.

4. A Responsive University Shopping Center

Based on the survey results, the UPD Shopping Center may be considered responsive on 3 levels: permeability or ease of access to the structure, variety of services offered, and legibility or recognition of the building itself from the perception of the respondents. Tables 4a to 4c show the high means of the 3 levels of responsiveness (5 being the highest point given per category).

Permeability	
Mean	4.164705882
Standard Error	0.07901857
Median	4
Mode	5
Standard Deviation	1.030276103
Count	170

Table 4a. Descriptive analysis on the permeability (ease of access inside and out) of the UPD Shopping Center

Variety	
Mean	3.664705882
Standard Error	0.080003532
Median	4
Mode	4
Standard Deviation	1.043118434
Count	170

Table 4b. Descriptive analysis on the variety of services offered of the UPD Shopping Center

Legibility	
Mean	3.511764706
Standard Error	0.094483495
Median	4
Mode	5
Standard Deviation	1.23191406
Count	170

Table 4c. Descriptive analysis on the legibility (recognition of the building) of the UPD Shopping Center

Stalls inside the Shopping Center are aligned along the straight double-loaded corridor at the center, making them easily accessible to the users. It is easy to go inside and out since SC has 3 main and 1 secondary entry points. The permeability of the structure contributes to the convenience of the users in availing their academic needs and services. Having a wide range of services offered also entices the community to patronize the Shopping Center, especially for the needs of the academic people. However, it is important to note also that not all services needed by UP employees are available at SC thus, off-campus amenities near UP Diliman become secondary options for them. It is interesting to note also that despite having a relatively low façade (the structure is 1-storey only), SC can be recognized easily by most of the respondents. This finding may be attributed to the fact that aside from its location beside a street passed by local public transports, there could be familiarity of the place since the respondents are employees of the University. Based on these results, it can be said that a certain level of responsiveness of the Shopping Center affects the patronage of the UP faculty and staff.

5. Perceived Streetscapes towards SC

The third major factor considered in this study pertains to the streetscapes leading towards the Shopping Center. Shown in Table 5 are the estimated means of the respondents' ratings for the different elements of the streetscapes. It is quite evident that the computed means are just near the average (either above or below). This means that no specified streetscape element stands out.

Streetscape Elements	Estimated Mean
Vehicular Road Conditions	2.705882353
Pedestrian Sidewalks	2.770588235
Trees/Plants/Foliage	3.017647059
Sun Shading/Cover	3.011764706
Parking Slots/Driveway	3.235294118
Waiting Sheds for Jeepneys	3.094117647
View of Surroundings/Vicinity	2.641176471
Pollution-free	2.641176471
Safety and Security	2.735294118

Table 5. Estimated means of ratings for different elements of the streetscapes leading towards SC

Each element can be related to the behavioral patterns of UP employees through their mode of transport when going from their academic units to SC and vice versa. Of the 3 modes of transport stated, riding the PUVs has the highest response. Waiting sheds for jeepneys on the other hand may or may not be sufficient enough according to the average rating of the respondents and even road conditions got a below average rating, therefore making them non-factors for those preferring to ride jeepneys when going to SC. For pedestrians, the below average ratings of sidewalks, view of the surroundings or vicinity, having a pollution-free environment, and safety and security do not prevent them from preferring to walk towards SC. With ratings just above the average, the elements of trees/plants/foilage and sun shading/cover may still be considered as factors for the decision of respondents to walk instead of riding a vehicle or public transport. Lastly, even if parking slots and/or driveways got the highest rating of all the elements, it is not considered a main factor that affects the movement patterns of UP employees due to the low incidence of respondents using their own private vehicles in accessing the Shopping Center.



Figure 11. Different elements of streetscapes (sidewalks, waiting sheds, natural sun shading or cover, etc.) are present on site. However, these elements are not considered main factors that affect the behavioral/movement patterns and level of patronage of UP employees to SC.

V. Conclusions

Based on the analysis of results of the survey for this study, there are three urban form attributes that can be considered main factors in affecting the level of patronage of UP Faculty and Staff on the University Shopping Center: (1) distance or proximity of academic units from SC; (2) having a local public transport system; and (3) a certain level of responsiveness of the commercial center. It is also shown that even if some features of SC are not appealing to the respondents, the level of patronage is still relatively high. The study also verified that the convenient length of walk for pedestrians is around 500 meters or less as indicated in the related literature and previous studies.

In terms of the perception on the streetscape elements, their presence or absence does not affect the preferences of the UP employees in their mode of transport going from their academic units to SC and vice versa – although we have to take note also that given our climate, the presence of trees/plants/foilage and sun shading/cover are beneficial for people traveling towards and from SC. Lastly, even with the relatively high level of patronage of SC, other off-campus amenities such as CitiMall in Philcoa, SM North and Trinoma Malls among others, also serve as secondary options for UP employees to cater to their basic academic needs that are not available at SC.

VI. Recommendations

Based on the reasons listed by the respondents, it would be better also for future studies to consider also other factors such as cost of services, location of residence of the UP constituents, and years of stay in the University that may affect the patronage of the UP community to SC. If there is no time constraint, it is suggested to survey more respondents to achieve the accepted level of confidence. Also, it can be considered for future studies to include the students and residents of the University as respondents since they are also considered part of the UP community and probable patrons of the Shopping Center.

References

- Amante, M.S.V. (2012). Wages and Cost of Living: Reviewing the UP Human Resources Plantilla. *The University of the Philippines Forum* (13,3), 3.
- Araneta, M.A. (2009). The University Experience in an Urban University: Preserving the Academic Environment of the University of the Philippines Diliman. *Espasyo: Journal of Philippine Architecture and Allied Arts* (1), 32-41.
- Bentley, I., Alcock, A., Murrain, P., McGlynn, S., and Smith, G. (1985). *Responsive Environments: A Manual for Designers*. Jordan Hill, Oxford: Butterworth-Heinemann Ltd.
- Cabrera, M.P., Ching, E.L. and Valencia, J.R. (1994). *The Academic-Commercial District of Ermita*. (Unpublished undergraduate thesis). University of the Philippines College of Architecture, Quezon City.
- Galingan, Z.C., Alcazaren, P.G., Ramos, G.C., and Santos, R.B. (2009). Pedestrian-Friendly Streetscape in a Tropical Business District. *Muhon: A Journal on Architecture, Landscape Architecture and the Designed Environment* (3).
- Gehl, J. (1987). *Life Between Buildings: Using Public Space*. New York: Van Nostrand Reinhold Company, Inc.
- Manadipour, A. (1996). *Design of Urban Space: An Inquiry into a Socio-spatial Process*. West Sussex, England: John Wiley & Sons Ltd.
- Pushkarev, B. and Zupan, J.M. (1975). *Urban Space for Pedestrians*. United States of America: Regional Plan Association.
- Ramati, R. (1981). *How To Save Your Own Street*. New York: Dolphin Books, Doubleday and Co.
- Reyes, C.M.O., San Juan, A.M.J. and Yap, M.F.M. (2000). *Architectural Wayfinding in an Urban Intermodal Station*. (Unpublished undergraduate thesis). University of the Philippines College of Architecture, Quezon City.
- Schaeffer, K.H. and Sclar, E. (1975). *Access for All: Transportation and Urban Growth*. Middlesex, England: Penguin Books Ltd.
- Ty, K.M.L. (2011). *The UP Commercial Complex as Iconic Architecture of the University of the Philippines in Diliman*. (Unpublished undergraduate thesis). University of the Philippines College of Architecture, Quezon City.
- Yang, P.P.J., Putra, S.Y. and Chaerani, M. (2007). Computing the Sense of Time in Urban Physical Environment. *Urban Design International* (12), 115-129.