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LIVING AND LEARNING: A TIME-BUDGET APPROACH EXPLORING DAILY ACTIVITY PATTERNS IN STUDENT BOARDING HOUSE

Ana Adiba
Architecture Master Program
School of Architecture, Planning,
and Policy Development
Institut Teknologi Bandung
anaa.adiba@gmail.com

Hanson E. Kusuma
Architecture Lecturer Program
School of Architecture, Planning,
and Policy Development
Institut Teknologi Bandung
he.kusuma@gmail.com

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ABSTRACT
Boarding houses are one of the most common types of accommodation used by university students, especially in urban cities. Student boarding house or Indekos represents a typical environment for students to balance their academic, personal, and social lives. Indekos function not only as places for resting and living but also as multifunctional spaces for studying, socializing, and performing daily routines. The current understanding of how students use time within these spaces remains limited, particularly in relation to their spatial behaviors, which leads to routine activites. The focus of this research is to identify the types of activities and duration performed by students in the boarding house or indekos using William Michelson's Time-Budget theory. Using mixed-methods approach, this study collected data through an open-ended questionnaire for the exploration of activity variables, which were then analyzed quantitatively using Factor Analysis (FA). From the results of preliminary exploration, it was found that students exhibit different activity patterns between weekdays and weekends. While the results of the latter analysis show that indekos serves dual roles: as efficient transitional spaces during weekdays and as flexible, restorative spaces on weekends. This study provides insights for the design of student boarding house or indekos that is more adaptive and compatible with their daily living patterns.

KEYWORDS: student boarding house, daily activity patterns, time-budget theory, planned-unplanned activities, individual-collective activities

Indekos merupakan salah satu tipe akomodasi yang digunakan oleh mahasiswa, terutama kota atau daerah dengan universitas yang cukup tersohor. Indekos merepresentasikan lingkungan khusus untuk menyeimbangkan kehidupan akademis, pribadi, dan dosial mahasiswa. Indekos tidak hanya berfungsi sebagai tempat beristirahat dan tempat tinggal, tetapi juga sebagai ruang multifungsi untuk belajar, bersosialisasi, dan rutinitas sehari-hari. Meskipun telah banyak penelitian tentang indekos, namun studi tentang bagaimana mahasiswa menggunakan waktu di dalam ruang-ruang kos ini masih terbatas. Terutama kaitannya dengan perilaku spasial mahasiswa yang mengarah pada pola aktivitas sehari-hari mereka. Penelitian ini berfokus untuk mengidentifikasi jenis aktivitas dan durasi yang dilakukan oleh mahasiswa di indekos dengan menggunakan teori Time-Budget oleh William Michelson. Dengan menggunakan pendekatan mixed-methods, penelitian ini mengumpulkan data melalui kuesioner terbuka untuk eksplorasi variabel aktivitas, yang kemudian dianalisis secara kuantitatif dengan menggunakan Factor Analysis (FA). Pada tahap awal penelitian, yaitu pada eksplorasi variabel menunjukkan pola aktiivtas yang berbeda pada hari kerja dan akhir pekan. Sementara pada hasil analisis faktor memperkuat pernyataan tersebut, bahwa indekos memiliki peran ganda: sebagai ruang transisi yang efisien selama hari kerja dan sebagai ruang yang fleksibel dan restoratif di akhir pekan. Penelitian ini memberikan wawasan untuk desain rumah kos atau indekos mahasiswa yang lebih adaptif dan sesuai dengan pola hidup sehari-hari mereka.

KATA KUNCI: *indekos, pola aktivitas keseharian, teori time-budget, aktivitas terencana-tidak terencana, aktivitas individual-kolektif*

INTRODUCTION

The rapid growth of student populations in urban cities due to universities has given rise to a phenomenon, which was introduced by Smith (2005) known as studentification, where neighborhoods transform socially, economically, and physically to accommodate student's needs. Studentification in Indonesia is characterized by the proliferation of boarding houses which provide as a transitional residence for students (Malinda, 2020). These boarding houses—which are often called as Indekos or Kos—play a critical role as a transient shelter, as there is a change in the environment of the student's lives which requires

adaptability, in both physical space and daily activities, as they start to learn to live alone (Asikin et al., 2022). In the previous studies (Malinda et al., 2020), which show how students lack of experience in living independently contribute to how they carried the activities within the student boarding house. Indekos also records their lifestyle related to how they utilize the space of Indekos for both the personal and the communal spaces. Each student has their own lifestyle, depending on the activities they engage in daily, which it from the daily activity patterns of each student as a resident.

In addition to supporting daily living, the boarding house settings also play a crucial role in shaping how the students learn. This is consistent with Kurowska et al. (2024), who found that housing problems significantly affect students' daily functioning, emotional well-being, and academic engagement, indicating that living environments are deeply intertwined with learning processes. Furthermore, Saputri et al. (2021) found that the quality of lighting, ventilation, and sufficient space in student boarding houses directly influences student's comfort and productivity during study activities. Adequate natural lighting and air circulation enhance the student's concentration and productivity. Poor lighting and ventilation, along with cramped space, could hinder the student's focus and affect their health. This suggests that the physical quality of student housing is not only matters for comfort and health, but also academic performance.

Characteristics of Indekos as physical space for student's living spaces are different from each other. There are several types of student housing, which are based on facilities, size, and furnishing. The common student housing usually provides single-person unit with existing furniture inside the unit, and communal facilities, such as a kitchen, bathroom, laundry space, and living room (Malinda et al., 2020). The type of units and facilities of the student housing could affect both student's behaviors and activities.

While many studies emphasize housing and boarding houses as the dynamic process of living, fewer explore how these environments shape the student's learning outcomes. The boarding house acts concurrently as both a living and learning milieu, wherein learning activities include studying, participating in online classes, and engaging in informal learning peer. Thus, aside from the living process, the learning aspect should be seen as an embedded spatial practice within the daily life of students in the boarding house. Saputri et al. (2021) study reveals that when lighting, ventilation, and space area are inadequate, students reported lower satisfaction with study performance, suggesting that spatial quality directly mediates learning efficiency. In addition, in Narida et al. (2025)'s study of the boarding house, further highlights how spatial arrangements influence the multimodal learning behaviors: visual, auditory, and kinesthetic. Thus, reinforces the importance of designing spaces that not only support living but also stimulate academic creativity and concentration. This is supported by Septanti et al. (2024), who found that boarding house spaces frequently undergo functional transformations in response to changing needs, demonstrating the flexible and adaptive nature of student living environments.

Prior research has predominantly examined the role of indekos as transitional homes that support academic success and social well-being. Thomsen and Eikemo (2010) investigated student satisfaction, emphasizing the importance of privacy and functionality, while Setijanti et al. (2023) explored the balance between private study spaces and communal areas. Although these studies provide valuable insights into spatial preferences, they neglect the rhythms of the routines that govern student's daily activities. The influence of space on the behavior of its inhabitants is clear because users carry out certain activities in each of these spaces, so that behavior that arises from the use of space can be created (Fitria, 2018, quoted in Purwantiasning et al., 2023).

The daily activities dynamics in the context of dwellings are based on spatial design, individuals' routines, and cultures. Activities in the dwelling are seen as inseparable attributes in the meaning of a house (Putra et al., 2016; Gershuny & Sullivan, 2020). In the research of Putra et al. (2016), the pattern of daily activities in the scope of the house and how residents utilize residential spaces with their activities. Dwelling activities can be generally classified into 1) sleeping and rest, 2) dining, 3) family gathering, 4) housekeeping, 5) nursing and education, 6) bathing, 7) hosting guests, and 8) cooking & utility (Gierlang et al., 2016). Understanding the temporal and spatial interactions in residential environments requires a framework that considers the rhythms of daily life. This view is supported by Gross (1984), who conceptualizes time allocation as a key analytical tool for understanding cultural behavior, arguing that daily routines reflect socially embedded values, norms, and structural constraints.

Michelson's Time-Budget Theory (1975) offers a robust foundation for this study, which asserts that individuals often allocate their time among various activities based on personal needs, environmental constraints, and lifestyle preferences. By analyzing how time is distributed within specific spatial contexts, this framework provides critical insights into the implicit relationship between physical environments and daily activities. In the prior study, time-budget theory was utilized as to identify cultural activity

patterns and investigate routines within housing dwellings (Putra, et al., 2016).

Michelson (1975) grouped daily activities into four basic aggregates: 1) the time of work, 2) physiological needs, which are having meals, personal care, sleep and health care, 3) time of duties, which are household works (chores), and 4) leisure, which include hobbies, passive rest, religious activities, etc. Michelson also stated that there are significant differences on the structural change of time budgets in weekdays and weekends. In comparison with the other days of the week, the time of physiological needs is prolonged and the time of duties is mostly replaced by leisure in the weekend. Therefore, the pattern two types of activities are prevailing; activities within the weekend are connected with physiological needs and leisure.

In the context of student boarding houses, there is a notable gap in understanding how students allocate their time and activities within these spaces. Existing studies often overlook the basic interplay between the allocation of daily activities and the use of spaces, particularly in the context of student boarding houses. The activities carried out by students on a daily basis are the result of how space affects behavior. The pattern formed out of temporal and spatial interaction, which it based on the daily activities. As Michelson (1975) stated, there are different patterns of activities on both weekdays and weekends, as it applies on how student lives in a boarding house.

This study intended to explore what kind of daily activities occur in student boarding houses, revealing how students dwell in the transitional houses which limit their space and time. Explaining the different patterns of student's activities in weekdays and weekends by focusing on the activities.

METHODS

This study adopts a mixed-methods approach to comprehensively explore the daily activity patterns of students living in boarding houses. Mixed methods research is an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study (Creswell & Creswell, 2018).

The methodology is divided into two sequential phases: a qualitative exploratory phase and a quantitative validation phase. The use of this approach allows for a holistic understanding of the phenomena under study, ensuring that findings are both in-depth and statistically representative. This research employed snowball sampling as a technique to gather data from the participants. According to Creswell (2012), qualitative snowball sampling is "a form of purposeful sampling that typically proceeds after a study begins and occurs when the researcher asks to recommend other individuals to be sampled". The participants required in this study are specifically aiming the students who live in student boarding house.

Data is collected using online platforms (e.g., Google Forms) and disseminated through social media channels, such as WhatsApp, Instagram, and X (formerly Twitter). In the first phase of the data collection, participants were guided to complete open-ended questions in the questionnaire about the activities that the students might do in the boarding house. The result of the open-ended questions was later on processed and analyzed with axial coding, which led to be the variables for the closed-ended questions for the second phase. For the second phase, the closed-ended questions were about the durations of the activities the students might do in weekdays and weekends. Later on, the data collected through phase two was analyzed with factor analysis (FA) to get the complete result. By integrating qualitative and quantitative methods, this study provides an understanding of student activity patterns in boarding houses.

Phase One: Qualitative Exploration

The first phase of the research employs an exploratory qualitative approach. Grounded theory, as defined by Creswell & Creswell (2018), refers to a qualitative research methodology that aims to obtain a comprehensive understanding or theory about phenomena, processes, actions, or interactions, based on insights provided by participants. The initial step involves data collection through open-ended questions regarding daily activities with its duration during both workdays and weekends within their boarding house. Any other variables related to student boarding house added, such as:

1. Perceptions of boarding house definition
2. Daily activities on weekdays and weekends
3. Duration of activities
4. Activities perceived as uncomfortable in the boarding house environment
5. Aspects contributing to the attractiveness of a boarding house

The part attributes collected in this questionnaire consist of personal information of the participants, regarding gender, age, boarding house residence, hometown, and current level of education. This phase aims to explore student's thoughts on the definition of boarding houses, the activities and their durations during workdays and weekends, uncomfortable activites to do within the boarding house, and the attractiveness of their respective boarding houses. Responses were analyzed using directed content

analysis and grounded theory techniques. Open coding was employed to generate themes, followed by axial and selective coding to categorize the responses into variables. Below are examples of the questions included in the qualitative questionnaire:

Table 1. Example of Open-Ended Questionnaire

No.	Questions	Response Format
1	What does "boarding house" mean to you?	Open-ended question
2	What activities do you usually do in your boarding house on weekdays?	Open-ended question
3	How many hours do you spend to do this activity in the boarding house on weekdays?	Choose accordingly (<6 hours, 6–12 hours, 12–18 hours, >18 hours)

Phase Two: Quantitative

Following the qualitative analysis result, a closed-ended questionnaire was developed in phase two of this study. Which measure with the following variables:

1. Frequency and duration of specific activities (weekday vs. weekend)
2. Comfort levels associated with different activities
3. Preferences for boarding house facilities.

The questionnaire was publicly shared through online platforms using a purposive sampling method, which made the students who fit the criteria as the partipants. The responses were measured using a Multiple-choice grid format, as seen in **Table 2**:

Table 2. Example Closed-Ended Questions

No.	Questions	Scale Grid	Response Format
1	How many hours do you spend on the following activities in your boarding house on weekdays? - Shower - Sleep - Study - Etc	0 = 0 hour 1 = < 1 hour 2 = 1 – 2 hours 3 = 2 – 3 hours 4 = 3 – 4 hours 5 = 4 - 5 hours 6 = 5 - 6 hours 7 = >6 hours	Multiple-choice grid
2	How many hours do you spend on the following activities in your boarding house on weekends? - Shower - Sleep - Study - Etc	0 = 0 hour 1 = < 1 hour 2 = 1 – 2 hours 3 = 2 – 3 hours 4 = 3 – 4 hours 5 = 4 - 5 hours 6 = 5 - 6 hours 7 = > 6 hours	Multiple-choice grid

Factor analysis (FA) was conducted for the quantitative responses to identify underlying dimensions of student activities, which involve calculating mean values for different activity categories, determining factor loadings (≥0.5 threshold), and grouping activities into major dimensions based on eigenvalues and scree plots.

RESULTS AND DISCUSSION

Student's Activities Within Student Boarding House

The qualitative phase of the study gathered various variables of activities based on open-ended questions, which provided valuable insights of the student's dwelling experiences in the boarding house, which revealed distinct activity patterns among students who reside. The qualitative responses analyzed through directed content analysis and thematic coding, which used open coding to identify recurring themes from raw responses, axial coding to group themes into broader categories, and selective coding to define final variables for the quantitative approach.

The data collected were from 81 students, 51 female students (63%) and 30 male students (37%), of whom the majority of the participants were undergraduate students, who might experience their first time living away from home in a boarding house. The analysis of open-ended responses revealed 15 main activity categories, covering both weekdays and weekends. These activities were further classified based on their frequency and perceived comfort level.

The responses highlighted that students predominantly view their boarding house as a multifunctional space that could accommodate academic, personal, and domestic needs. **Table 3** shows the result of open coding of the activities with the frequencies.

Table 3. Open-coding results on student's daily activities within the boarding house

Code/Category	Weekdays Activities	Weekends Activities
Academic works	51	28
Preparing for the next day	4	2
Working out	8	3
Cleaning	35	69
Cooking	28	21
Dining	50	30
Shower	22	13
Reading	8	6
Studying	15	7
Rest	70	59
Hobbies	2	7
Socialization	7	7
Leisure	41	70
Prayer	11	8
Working	11	4

The findings suggest a clear distinction in activity patterns between weekdays and weekends. During

weekdays, students prioritize structured activities such as academic work, preparing for the next day, and resting. In contrast, weekends are characterized by relaxation, social interactions, and increased involvement in domestic activities. Students reported that their boarding houses serve as primary locations for studying, completing assignments, and attending online classes. In weekdays, students answered relaxing (70) and eating and drinking activities (50) as the most frequent answers. While students tend to state leisure activities (70), domestic activities (69), and relaxation (59) during weekends.

Another key finding within the activity patterns, that the function of the boarding house serves as a social space. Each student's preferences for social interaction are different from one another, while some students preferred solitude for focused studying and rest, others enjoyed the social aspects of shared living spaces, such as the use of communal kitchen and etc. The balance between personal space and communal interaction varied among students, with some expressing a need for more structured common areas to facilitate better socialization. This, too, indicates how students negotiate the space between living and learning functions. As the bedroom often serves a dual purpose, a sleeping area and study zone, which reflects a multifunctional space under spatial constraints. While shared spaces such as the living room could be used as occasional study spots. Narida et al. (2025) extend this argument by showing the overlap of living and learning territories often leads to spatial tension and territorial infringement in shared boarding houses. This territorial fluifity aligns with Michelson's (1975) temporal adaptibility but occurs spatially, which students continously reconfigure their environments to balance living and learning coexistence.

Referring to the prior studies of dwelling activities in residential context, daily activities can be generally classified into 1) sleeping and rest, 2) dining, 3) family gathering, 4) housekeeping, 5) nursing and education, 6) bathing, 7) hosting guest, and 8) cooking & utility (Michelson, 1975; Gierlang et al, 2016: Gershuny & Sullivan, 2020). The results of this study have more or less the same outline as the reference, that the activities that exist within the scope of the residence are around the same activities.

Aside from the exposure to daily activities of students within the boarding houses, the results from Phase 1 show that there were several differences in activities between male and female students. At least three activities suggest that more female students were involved in the activities of cooking, tidying up their rooms, and doing laundry than males. The result shows that during weekdays, 65% female students cook, while only 13% male students cook. In the other activity, such as tidying up the rooms during weekdays and weekends, 61% and 82% female students tend to make time to do the activity, respectively, compared to male students (20% in weekdays and 33% in weekends). In addition, more female students do laundry during weekdays (29%) and weekends (59%) than male students. These differences in activities will lead to how both genders use the physical elements of the student housing.

In the context of this research, namely in the form of student activities in boarding houses, the daily activities of students are divided into activities on weekdays and on weekends, due to differences in the function of boarding houses that overshadow student activities. Based on the qualitative results, thematic analysis identified three major activities:

1. Academic and Productivity-Based Activities, in which the majority of students agreed that using their room in the boarding house as a primary space for studying and completing academic tasks.
2. Recovery Activities, in which students emphasized that the main idea of the boarding house is to rest and recover.
3. Domestic Activities, aside for fulfilling academic and personal needs, domestic activities occur as students need to take care of themselves, and their space.

To better understand how students allocate their time within the boarding house, Factor Analysis (FA) is employed to analyze quantitative responses on self-reported activity-duration data, in addition to qualitative data. The collected data were obtained from 81 participants who provided insights about the activity-duration patterns during weekdays and weekends, which indicate various and significant differences in how students approach their daily activities.

Based on Factor Analysis (FA) table result on **Table 4.**, the patterns of the weekdays activities within the boarding house represent five clusters of activities, which are based on the durations of each activities:

1. Domestic Activities (DA), which consist of house (room) chores. With mean factor 1.39, revelead that these activities are least-time consuming during weekdays routine.
2. Academic Activities (AA), with mean factor 2.43, which consist of academic-related activities. Despite majority of time in campus within weekdays, students still make time to do academic-related.
3. Leisure Activities (LA) with mean factor 2.65, include entertainments, which highlight the need for downtime amidst a long day.
4. Work and Rest (WRA) with mean factor 3.15, which consist of opposite behaviors, work as active activity and rest or nap as passive activity.

5. Preparation and Sleep (PSA), with mean factor 3.88, which consist of preparing for the following day and sleep.

Table 4. Factor Analysis result of Weekday activities

Weekdays Activities	Mean	Factor Loading	Eigen value	% of Variance	Cum %	α
Domestic Activities (DA)	1.39		5.73	20.35	20.35	0.43
Tidying up	1.34	0.87				
Doing dishes	1.17	0.82				
Taking bath	1.19	0.72				
Laundry	1.40	0.63				
Cooking	1.24	0.62				
Doing prayer	0.17	0.62				
Dining	1.65	0.55				
Academic Activities (AA)	2.43		2.30	14.58	34.9	0.38
Studying	1.87	0.80				
Reading	2.02	0.76				
Online lectures	1.93	0.69				
Academic tasks (assignments)	3.91	0.62				
Leisure Activities (LA)	2.65		1.67	13.58	48.52	0.48
Playing	2.24	0.80				
Watching	2.88	0.72				
Hobbies	2.44	0.68				
Listening to music	3.04	0.60				
Preparation and Sleep Activities (PSA)	3.88		1.32	8.77	57.30	0.57
Preparation for the next day	1.86	0.70				
Sleep	5.91	0.66				
Work and Rest Activities (WRA)	3.15		1.12	7.16	64.46	0.52
Work (WFH)	2.44	0.71				
Rest or Nap	3.86	0.68				

(Source: Author's Analysis, 2025)

The domestic activities (DA), academic activities (AA), and leisure activities (LA), which have a low Cronbach's alpha (α) below 0.5 (α<0.5). Mean these clusters have poor reliability, based on each of the components of the respective clusters.

In Domestic Activities (DA), the low Cronbach's alpha (0.43) suggests internal inconsistency, where the variable components were all domestic chores activities, except "doing prayer," which has the lowest mean in the cluster (0.17), which may not align with other variables. While in Academic Activities (AA), which has a low Cronbach's alpha (0.38), despite having relatively strong loadings of the components, the low Cronbach's alpha may imply the divergence in how students engage with the activities. For instance, structured activity (online lectures) and unstructured activity (reading or learning). The varied involvement of the activities could unbalance the structure of the factors. Similar to AA, Leisure activities (LA) shows moderate loadings factor and similar means of each component, despite the low Cronbach's alpha (0.48), which is possibly caused by the diverse involvement of activities (i.e., passive watching and active playing).

As for Work and Rest Activities (WRA), this factor blends contrasting behaviors (work and rest), which appear as opposing activity types (active and passive activity). The grouping of work and rest into this factor suggests that these activities share similar time allocations. In Psychology and Health studies, despite being opposing activity types, both work and rest activity rhythm patterns are interrelated components of behavior (Qin et al, 2025). The study related to how work and rest behavior interlaced in the same pattern component during lockdown periods, where the situation was remote work and naps in the same space and periods.

This statement could be similar in the context of Preparation and Sleep Activities (PSA) factor, which both activities is characterized by a transitional routine. The lack of a variable component in this factor affects the measurement of the reliability (0.57), while having strong loadings.

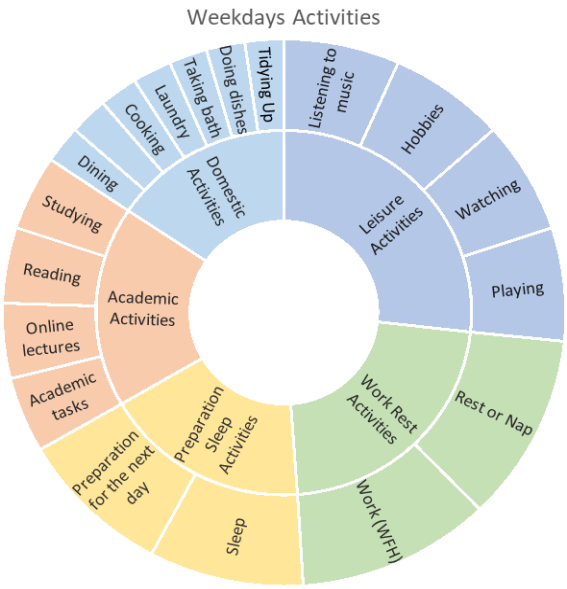

Figure 1. Weekdays Activities based on Factor Analysis result
(Source: Author's Analysis, 2025)

Conversely, the result of Factor Analysis (FA) shows the majority of the participants spend their time in weekdays by preparing for the following days and sleeping. In contrast, domestic activities, academic-related activities, and leisure activities were generally allocated in shorter durations. This aligns with the reality, where students spend most of their weekdays on campus to attend lectures. Additionally, the longer duration of sleep (mean 5.91 or equal to 6 hours) compared to other activities highlights the boarding house's role as a transitional and recovery space.

While the FA result of the weekends activities in **Table 5**., activity structure shifts significantly with the strong factor loadings of each of the variable components, which imply the use of space in the boarding house. Unlike weekdays, where student activities are highly structured by spending their time in campus and less time in the boarding house. By the

weekends, the activities seem varied and flexible, since most of the time student occupied more of their space in the boarding house. The Factor Analysis (FA) for weekend activities identified five main clusters.

1. Domestic and Academic Tasks (DAT) with mean factor 4.85, which consist of household chores (dining, taking bath, doing prayer, doing dishes, cooking, laundry, tidying up) and academic tasks (assignments). This cluster of activities
2. Leisure Activities (LA) with mean factor 5.69, including hobbies, playing, watching, and listening to music.
3. Productive Activities (PA) with mean factor 4.37, which include stduying, online lectures, work (WFH), reading, and working out.
4. Recovery Activities (RA) with mean factor 6.42, consist of sleep and rest (nap). These activities are the most significant weekend activity based on the mean factor. It reflects the need of recovery from demanding and structured schedule during the weekdays.
5. Social Interaction (SI) with mean factor 1.55. The social interaction factor resurfaced during the weekend activity, emphasize the role of weekends as a time to socialize within the boarding house space.

Table 5. Factor Analysis result of Weekends activities

Weekends Activites	Mean	Factor Loading	Eigen value	% of Variance	Cum %	α
Domestic and Academic Tasks (DAT)	4.85		6.21	21.10	21.10	0.50
Dining	1.98	0.83				
Taking bath	1.48	0.78				
Doing prayer	2.02	0.75				
Doing dishes	1.04	0.68				
Cooking	1.77	0.63				
Tidying up	1.59	0.61				
Laundry	1.32	0.59				
Academic tasks (assignments)	2.74	0.58				
Leisure Activities (LA)	5.69		2.76	16.16	37.27	0.59
Playing	3.34	0.90				
Listening to music	3.25	0.84				
Watching	3.45	0.82				
Hobbies	2.96	0.72				
Productive Activities (PA)	4.37		1.93	14.15	51.43	0.64
Studying	1.27	0.81				
Online lectures	0.67	0.74				
Work (WFH)	1.58	0.66				
Reading	1.90	0.61				
Working out	1.33	0.58				
Recovery Activities (RA)	6.42		1.38	8.03	59.46	0.69
Sleep	5.86	0.82				
Rest or nap	4.35	0.69				
Social Interaction (SI)	1.55	0.78	1.07	7.37	66.84	0.75

(Source: Author's Analysis, 2025)

The findings posit that the five factors respectively have strong factor loadings of each component, which indicates each of the variables is influenced by the factor. In Domestic and Academic Tasks (DAT), the essential routine activities clustered in this factor reflect structured personal responsibility, which share functional and non-leisure activities. The Cronbach's alpha (α=0.50) suggests moderate reliability, likely due to the various range of variables.

Leisure activities (LA), which consist of recreational behaviors such as playing games, watching, listening to music, and engaging in hobbies, it represent self-directed enjoyment and detachment from weekday activities. The factor's reliability (α=0.59) suggests students have their own weekend leisure choices, but the high factor loadings of each component affirm conceptual unity (Michelson, 1975; Putra, 2017). While Productive Activities (PA), students tend to do both cognitive and physical activities during the weekend, which include studying, online learning or courses, reading, working, and exercise. This reflects a group of students view weekends as a time to fulfill their own personal goals and self-development. The reliability of this factor (α=0.64) explains the coherence of this goal-oriented behavior in the same group of activities (Michelson, 1975).

As for Recovery Activities (RA), which consist of sleep and rest, received the highest mean scores, indicating that students allocate their weekends primarily for physical and psychological recuperation to recover from the weekdays' stress. The reliability of this factor (α = 0.69) and strong loadings confirm the unity in this factor, coming from the same-type activities. Additionally, factor 5, Social Interaction (SI) emerged as a distinct dimension, despite consisting of only a single component. The strong factor loading (0.78) and strong Cronbach's alpha (α=0.75), implied that social engagement during weekends occupies a unique pattern of behavior, separated from other weekend activities. While having strong loadings and reliability, this factor tends to have a low mean, which indicates that social interaction is either less prioritized during weekends, or some just selectively engage in. This happened possibly due to the preference for solitude or recovery (Michelson, 1975).

Based on the FA results, as for weekends, the majority of students interpret the boarding house as a recovery space, helping students compensate for the weekdays' schedule exhaustion. Despite the need of relaxation, students still engage in self-paced academic-related tasks, personal development or catching up on domestic chores. As shown on the FA table, the variance range of activities weekends are wide, reflecting the different choices of behavior of student's dwelling life during weekends. Where students deliberately allocate their time to do either household chores, academic tasks, enjoyment, or recovery activities. Unlike the other activities that increase dramatically during weekends, social interaction, as a new factor, emerges, and students are likely to engage in communal activities within the

boarding house. Despite the engagement of social interaction, students most likely prioritize resting or entertaining themselves with leisure activities.

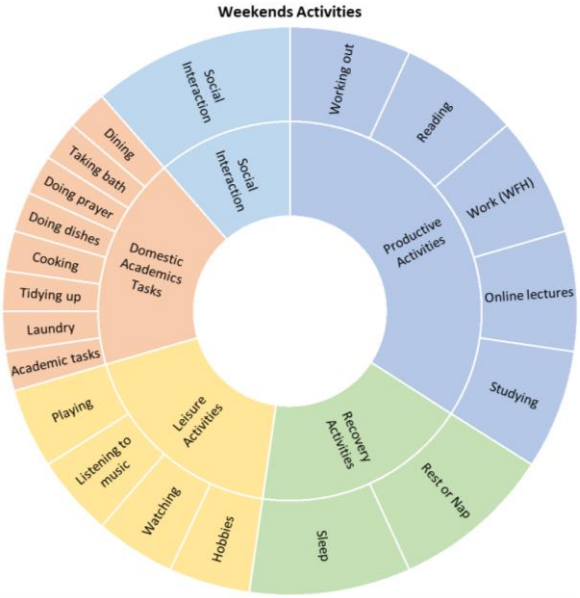

Figure 2. Weekends Activities based on Factor Analysis result

(Source: Author's Document, 2025)

Temporal Rhythmic Activities: Planned - Unplanned

The Factor Analysis (FA) demonstrates a clear contrast in activity patterns between weekdays and weekends in how students allocate their time in boarding houses. As shown in both FA result tables, the grouping of each dimension was made based on the answer patterns, which leads to grouping the activities. The mean in each dimension implied the average of activities' durations carried out by the students, about how they allocate their daily activities.

During weekdays, students primarily engage in planned and structured activities that have been regularly scheduled by following the student's life. Most of their time was spent on campus for a whole day, and in the boarding house at night, which divides the role of the boarding house into a place of learning and living. Learning activities consist of academic-related works which take place away from the boarding house, while living activities include sleeping, with other activities, such as taking care of themselves (dining, taking a bath, etc). This structured time allocation and the small portion of living activities during weekdays make the student's spaces in the boarding house a transitional space, where students return mainly for essential recovery and efficiency-driven tasks, aligning with Michelson's theory, where physiological needs matter the most during weekdays.

Contrary to weekday's activities, weekends exhibit a shift toward unplanned and spontaneous activities, particularly leisure, housework, and interactions (Gershuny & Sullivan, 2020). The increase in resting and leisure activities indicates that students take advantage of unstructured time to recuperate.

While the students are doing leisure activities and take time slowly, they tend to do activities that they have postponed during weekdays, such as household chores (laundry, tidying up or cleaning their space), and still make time for their academic needs. The balance between these activities shows that students prioritize efficiency in time management, yet this spontaneity also demonstrates the role of boarding house as a space for recovery from the weekdays' hectic life. The contrast of weekdays and weekends' activity patterns ultimately formed the temporal rhythm; planned (weekdays) and unplanned (weekends) activities, which shows that students live in an adaptive lifestyle. These findings align with Michelson's (1975) Time-Budget Theory, which suggests that individuals allocate their time based on three key factors:

1. Personal needs, which are defined by physiological activities, such as sleeping and dining, that remain constant across both planned and unplanned days.
2. Environmental constraints, when a structured schedule during weekdays limits the student's activities both in campus and boarding house, leading to rigid time allocation for academics and essential need (learning and living).
3. Lifestyle preferences, when the constraints of time allow students to engage in spontaneous activities during weekends, depend on their own preferences; whether it is leisure, relaxation, or doing chores.

This dynamic of student's activity patterns highlights the adaptive nature of student boarding houses, which function as efficiency and transitional-oriented spaces during weekdays, and relaxation-recovery-oriented spaces during weekends. The balance between planned and unplanned activities ensures that students maintain their academic discipline while preserving their well-being within the boarding house.

Temporal Rhythmic Activities: Individual - Collective

Furthermore, the grouping of activities during weekdays and weekends forms another activity pattern due the various interpretations of the Factor Analysis (FA) results. In addition to understanding the activity patterns of students in boarding houses through the distinction between planned and unplanned activities, the analysis further interprets to distinguish between individual-focused activities and collective-communal activities in student boarding houses. The results indicate that weekday activities are primarily individual-focused, as a consequence of the student's structured life. In contrast to the prior

statement, this trend shifts on weekends, where students engage more in collective activities i.e. social interaction.

Michelson's Time-Budget Theory underlines that the allocation of time for certain activities is strongly influenced by the physiological and social needs of individuals (personal needs and lifestyle preferences), as well as the physical environment in which they live. These determinants influence how students balance individual and collective activities across weekdays and weekends, reflecting a structured to flexible shift in time management. In the context of individual, as wstructured-to-flexible as collective activities, this play an important role in determining the duration and intensity of student activities.

As social interaction factor emerge as collective activities, which reflect individual social needs that are flexible and often spontaneous. During weekdays, individuals' effectiveness is prioritized. Activities such as studying, coursework, sleep and personal care occur within the defined time blocks, leaving minimal room for social engagement in the boarding house. The absence of social interactions as a dominant factor in weekday analysis suggests that students tend to limit their engagement with others due to time constraints and academic responsibilities. This reinforces the idea that boarding houses primarily serve as private spaces for individual productivity during structured days, so the variety of activities on weekdays is rather small.

In the environment of living with others, social interaction becomes a culture that is often practiced in the daily life, whether formally or informally. To enhance social interaction activities, everyday space close to people's lives and is certainly used for their daily activities (Faradila et al., 2025). In the context of student housing, communal spaces have the potential to enhance the social interaction due the passive encounters by using the same space.

In the empirical findings of Michelson's Time-Budget Theory, necessity-driven time allocation makes students engage in self-directed and goal-oriented activities due to academic responsibilities and external pressure. The environmental constraints (college courseworks) reduce time availability for social interactions, reinforcing Michelson's assertation that time budgets are shaped by external structure. While the allocation for social needs, since weekday demands force students to conserve social energy, leading to limited interpersonal engagement.

In contrast, weekends show the emerges of social interaction as new activity, reflecting in the greater needs on interpersonal activity. While students still allocate time for individual activities, the presence of shared leisure activities—interaction with others within communal space—indicates a transition toward socially-oriented behavior. This kind of interaction not only provides emotional comfort but also supports their life balance. On weekends, a more flexible rhythm allows students to engage in more meaningful and relaxed social interactions, hence creating a variety of activities. This aligns with Michelson's time allocation when structural constraints (environmental constraints) are reduced, individuals naturally shift toward personal needs and lifestyle preferences activities. Temporal flexibility of this activity enables students to engage in social activities without rigid scheduling constraints.

Implications: The Rhythmic Activities on Boarding House's Design and Policy

The patterns of planned and unplanned activities among students reflect that boarding house design must support two core functions: facilitating structured (planned) activities and accommodating flexible (unplanned) routines. The boarding house design should provide efficiency and flexibility to improve student's quality of life. By creating adaptable spaces, students can be more easily allocated their time according to their needs, enabling students to navigate their daily activities without feeling restricted by the limited physical space.

To achieve prior statement, the design of the boarding house should integrate the concepts of space that supports student's various activities patterns. Quiet and private areas are needed for productivity of studying and sleeping, while shared communal areas should support leisure and social interaction. Additionally, outdoor zones and multi-functional spaces can promote student's well-beings and accomodate both individual and group activities.

At the policy level, student boarding house needs to get formal rules or policies from the government, since most of the student boarding houses in Indonesia are off-campus boarding houses, and it is gradually becoming a culture of Indonesian students. It needed to be thoroughly researched, both the culture and the houses' design, which should be align with the needs of the student's dwelling activities.

Student boarding house's facilities do more than meet basic living needs, but it also assist student's well-beings, by recognizing the shifts between individual and communal activities, which allow for more responsive design and policies.

CONCLUSION

This study concludes that students have their own pattern of dwelling in the boarding house that reflect the dynamics of temporal actviities (planned-unplanned), as well as both individual and collective needs. By using Michelson's Time Budget theory as the main literature, which supports how people allocate their time in their daily activities during weekdays and weekends. In this context study, using time-budget

theory, provides insights into how students allocate their daily time, both in weekdays and weekends, within the student boarding house. Based on the results of two-phase research, it can be seen that the definition of a boarding house for students is different, both in weekdays and weekends. As well as the different activities that occur on weekdays and weekends, which lead to the activity patterns and interpretation of both.

On weekdays, student's activities are more structured with durations focused on efficient activities, while on weekends, activities tend to be more flexible and oriented towards recreational needs. In addition, other activity patterns emerge, which divide weekdays and weekends into individual and collective days. Then there would be a different role of the boarding house as the physical environment during weekdays and weekends. In the weekdays, the boarding house's role as a transitional space that needs to be private and quiet, as weekdays' schedules are structured and individual. Whereas in weekends, the activities are more flexible and social interaction possibly occurs, hence the boarding house's facilities need to support the versatility of student's various activities.

The need for spaces that support student activities in the boarding house is based on creating an adaptive, responsive, and comfortable boarding house environment for students who live there. In addition, there are several activities which show the differences how male and female students carried out activities within student housing, such as how females make time to cook, tidying up rooms, and doing laundry more than male students during both weekends and weekdays.

Beyond the rhythm of living, this study also reveals that learning activities are strongly affected by the spatial configuration of the boarding house. Bedrooms, as primary private zones, often function as individualized learning spaces that support focus but may limit collaboration, depending on the availability of the shared spaces.

The implications of these results for the design and management of student housing need to be made for the males and females respectively, to accommodate their behavior towards how they carried activities. Such as how kitchen and laundry space are more important in female student's housing than male student's housing. The need of sufficient natural lighting, air circulation, and space are could avoid the hindering concentration. Therefore, student housing design should integrate ergonomic and environmental principles that support both restorative living and productive learning. As well as the further research related to student activities in boarding houses, comfort activities, and elements in boarding houses is needed.

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