

TOPICS IN EXERCISE SCIENCE AND KINESIOLOGY

Elevator Or Stairs? A Dive Into Patron Decision Making

Process of Science

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Abstract

- When put in a situation to get to higher/lower floors of a building, there are many factors that go into play for whether an individual chooses to take the stairs (active) or ride the elevator (sedentary).
- Students were approached at waiting area for the four elevators in a University Library and were asked series of questions regarding their reasoning for taking the stair or elevator to ascend, as well as their thoughts on the stairwell appearance.
- Point of application #1: Stairwell appearance and aesthetics should be considered during the design and construction process in order to increase use and physical activity amongst individuals.
- Point of application #2: Stairwell and elevator location, along with signage, should be considered during the design or remodeling process to create a more accessible stairwell.
- Point of application #3: The benefits of taking the stairs rather than using an elevator should be promoted to encourage using the stairs.
- Key Words: active lifestyle, active transport, point of decision prompt, physical activity, health

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Introduction

Physical activity and active transport (i.e. walking, biking, taking the stairs) are closely related¹ and are associated with significant positive health outcomes, such as reduced risks of type 2 diabetes, hypertension, types of cancers, cardiovascular disease, and mental health issues.^{2,3} While traveling, indoors/outdoors, individuals are faced with decisions to either physically exert themselves or to use technology. One of the more common decision-making dilemmas of active travel is using a car/bus versus walking/biking; but, the decision to take the stairs or to use an elevator also creates a similar dilemma. Effective intervention studies in workplaces and public settings have focused on a combination of motivational (e.g. "burn calories, not electricity") and directional signs near both locations (stairs and elevators).⁴ These signs, referred to as 'point of decision prompts (PODPs)', have been shown to be effective in public settings.⁵ This study aims to examine the reasons why patrons of a University Library decide to use the stairs or elevator in order to suggest possible stairwell enhancements (for current or future buildings) to increase healthy and active living habits.

Methods and Results

Research assistants approached library patrons and asked them if they would like to participate in a survey. These research assistants were located at a point of the building on the 1st floor where individuals were required to choose between taking the stairs versus the elevator. The survey was developed in conjunction with the University Library and its staff to ensure proper and important questions were asked. Demographics (age, gender identity, student/staff/faculty/library personnel, current year or enrollment), whether participants met weekly moderate physical activity recommendations, whether participants wore a fitness tracker, and whether the participant looked obviously overweight/obese were all collected during the interview process. Participants were also asked about their behaviors (e.g. "stairs or elevator", "what floor", "how they planned on coming back down"). An opened ended question concerning why they used the stairs or elevator was also given (without a prompt). This study was approved by the Institutional Review Board. The majority of participants were students (n=152, 97.4%) and most used the elevator (n=109, 69.87%) to ascend to their floor of choice. Elevators users (M=3.72, SD=.84) showed a significantly higher destination compared to participants who took the stairs (M=2.45, SD=.75) [$p<.001$, $t=9.027$]. Participants who took the elevator did so for convenience (30.28%), it was quicker (24.77%), it was a long way to go (17.43%), and less effort (17.43%), while some participants (11.01%) did not know where the stairs were located. By contrast, the reasons behind individuals taking the stairs included quickness (42.55%), exercise (25.53%) and overall health (19.15%). The major stair appearance recollection, for both elevator and stair users, were overwhelmingly negative, and are reported in Table 1.

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Table 1. Participant recollection of stairwell appearance

Recollections	All (n = 118)		Elevator users (n = 71)		Stair users (n = 47)	
	n	%	n	%	n	%
Dark	31	26.27	20	28.17	11	23.40
Poorly lit	18	15.25	10	14.08	8	17.02
Grey	14	11.86	7	9.86	7	14.89
Concrete	11	9.32	4	5.63	7	14.89
Creepy	10	8.47	6	8.45	4	8.51
Depressing	9	7.63	4	5.63	5	10.64
Cold	8	6.78	8	11.27	0	0.00
Dull	6	5.08	2	2.82	4	8.51
Loud or echos	5	4.24	4	5.63	1	2.13
Narrow	5	4.24	2	2.82	3	6.38
Musty	4	3.39	0	0.00	4	8.51
Steep	2	1.69	2	2.82	0	0.00
Smelly	2	1.69	1	1.41	1	2.13
Dank	1	0.85	1	1.41	0	0.00
Dry	1	0.85	0	0.00	1	2.13
Warm	1	0.85	0	0.00	1	2.13

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1. Stairwell Appearance and Aesthetics

Stairwell appearance is something that was found to be important in the eyes of the patron. As evidenced by the negatively connotated recollections of participants, these characteristics could potentially decrease patron's motivation to use the stairs. Improved (brighter) lighting, better location, and better signage emerged as the most common enhancements that would increase participants' likelihood, or experience, of using the stairs (Figure 1). Many of the recommendations received from patrons regarding the stairwell aesthetics and structure can be implemented to remedy the negative recollections. Renovating and/or designing stairwells with positive features such as art, good location, and better lighting will potentially increase the amount stair-taking patrons compared to elevators.

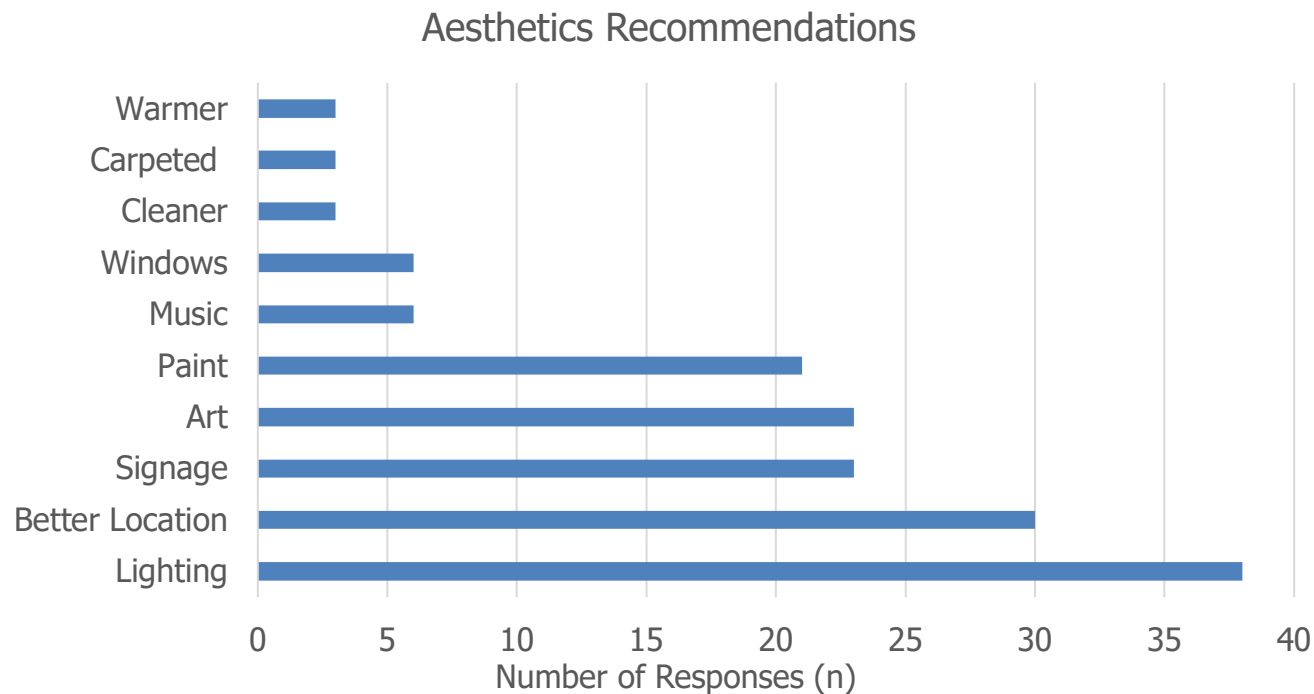


Figure 1: Participant aesthetic recommendations

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2. Stairwell Ease of Access

Among all recommendations, two of the most common were better location and signage. In this particular University Library, the stairs are hidden through a door with a long hallway after passing the elevators (Figure 2). Many patrons (44.91%) spoke of the problems with proper signage to the stairwell along with location. Over ten percent of elevator users ($n = 12$, 11.01%) did not know where the stairwell was located. Without the knowledge of the stairwell location, participants are not afforded with an option of considering using the stairs instead of the elevator. Engineers and architects should consider the accessibility and convenience of stairwell placement in relationship to the elevator in order to increase active transport throughout multi-floor buildings.

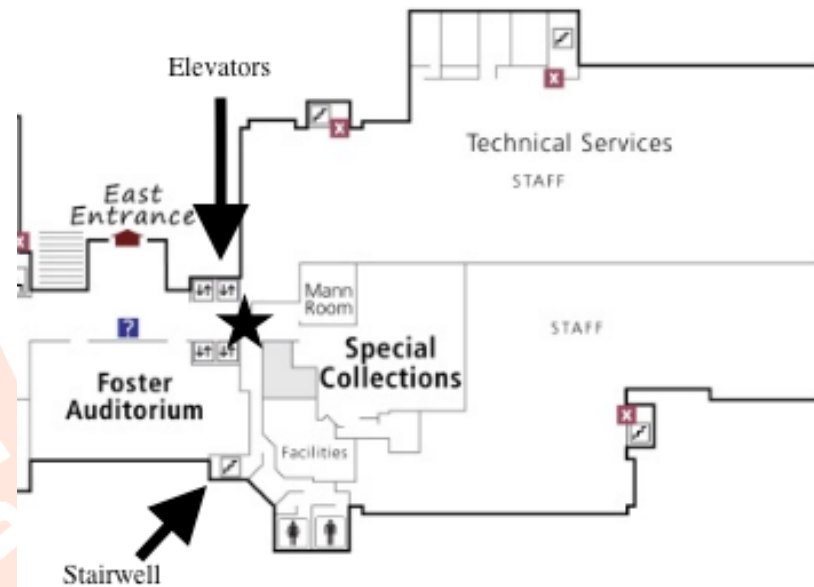


Figure 2. First floor library⁹. Elevators (4 total) and stairwell are marked by arrows (star indicates where the interviews were conducted).

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3. Application of Daily Physical Activity Knowledge

As the prevalence of sedentary lifestyles and obesity increase⁸, it is important to educate all individuals on ways to stay healthy and active. As the average individuals' day becomes busier and busier, it is important for people to become knowledgeable of every-day exertive exercises in order to maintain a healthy lifestyle through supplemental PA. Education of alternative routes of travel can be used through PODPs stated before are shown to be successful in public places⁵. These PODPs are important for increasing motivation through tips and knowledge which state why individuals should be taking the stairs instead of the elevator⁵. Outside of the building, school-based physical activity and physical education has been shown to be important in creating healthy physical activity lifestyles for a lifetime⁷. To ensure active travel is used as a supplement to regular physical activity, it is important that individuals are mindful of the positive effects of these activities.



Figure 3. Example of PODP signs created by the CDC⁶

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