

# Design Joyful Urban Experiences with the Aid of Persuasive Design \*

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## ABSTRACT

Design for positive emotions has moved to broader concepts, including overall life satisfaction followed by long-term effectiveness and satisfaction with product use, pleasurable interaction, and sensory pleasures. For this purpose, the present study evaluates the design process of joyful experiences as a case in urban furniture using persuasive design principles for the target group of children. This study used the descriptive method reviewing 30 studies conducted on the considered subject, and summarizing them in the research background section. The distinction between affections and influencing methods proposed by Tromp was examined using psychology. In this research, Fogg Behavior Model also helped as the base for all persuasive design and behavior change models to find and identify a lack of psychological elements. Therefore, successful global cases were selected to identify Joyful elements in urban furniture and compared them with 28 principles suggested by Kukkonen and Harjumaa in the framework of primary task, dialogue, system credibility, and social support groups. These principles can be used with qualitative features suitable for designing various products. Card sorting tools and participatory design were used to identify users' preferences, and the obtained ideas were developed using Lockton's subjective ideation method, and ten 8-12-years-old users were asked to assess the three presented concepts in the frame of 9 emotional dimensions of the PrEmo Method. As PrEmo Method uses cartoon characters with sound and motion, it is more comprehensible for children. The research results indicated that final ideas obtained acceptable scores concerning positive affection, and the persuasive approach serves as a prominent factor and suitable guideline for designers to design exhilarating experiences and interactions. Moreover, these principles must be amplified to increase the user's perceived experience quality.

**Keywords:** Joyful, Persuasive Design, Happiness Design, Urban Furniture.

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## 1. INTRODUCTION

Design requires a starting point, an idea, and a seed for growth and nutrition. While a problem-driven approach considers the problem as a starting point, a possibility-driven approach looks for a possibility. This possibility must be rooted in our knowledge, action, and human needs. In general, this approach aims to discover the role of design in the positive space beyond impartiality and find opportunities for individuals' prosperity. This approach also takes step towards hope by targeting the subjective well-being of individuals and communities (Jimenez et al. 2014). Subjective well-being is measured based on various scales, such as positive and negative impacts, social support, and happiness (Helliwell, Layard, and Sachs 2019). Researchers have found antecedents of the impact of public conditions and policies on the average subjective well-being in communities (Easterlin and Switek 2014). Likewise, Desmet and Hassenzahl (2012) want to replace problem-solving with possibility-driven design, and which final result indicates the transition from neutralizing negative aspects to positive aspect exploration rooted in "positive psychology" theories and frameworks. Design researchers at the Delft Institute of Positive Design believe that focusing on the user's positive emotions is a significant part of user-based design, which is an anticipating and reliable approach to design success. Sonja Lyubomirsky, Laura King, and Ed Diener (2005) found happy people more successful in many spheres of life. Such people are more sociable, altruistic, and active with a stronger body and immune system and better problem-solving skills. In addition, happiness strengthens constructive and creative thinking (Desmet and Pohlmeier 2013). Moreover, these individuals play a vital role in developing society and are more competent (Lyubomirsky, Sheldon, and Schkade 2005). Since many emotional and behavioral characteristics of humans are shaped during childhood and adolescence, emphasis on comfortable, safe, accessible, responsive, attractive, and creative spaces that provide the field for the physical and mental growth of children must be considered in the creation of urban spaces (Churchman 2003).

Today, design can bring happiness by creating or interfering with positive experiences (enjoyable life/hedonism), and also, by encouraging individuals to find their abilities for rising happiness (good life/hedonism). Those products that create or intermediate positive experiences can even remind them making them more enjoyable (Desmet and Hassenzahl 2012). Urban furniture is an outstanding urban element its various functions bring many advantages to the surrounding urban environment. Also, urban furniture is a constructive element of urban space its quantity, quality, beauty, comfort, durability, and location play a crucial role in having a healthy and beautiful city

(Azadkhani and Tahmasebi Kia 2017). The present study investigates the design and evaluation process of urban furniture as an underlying element used to create joyful experiences for urban users, particularly for children. Various tools are matched with the objectives of design and emotion. This research selects a persuasive design approach regarding the persuasive technologies overlapped with design for happiness.

## 2. EMOTIONAL EXPERIENCES

Positive psychology at the subjective level is about valuable subjective experiences, such as well-being, satisfaction, and contentment (in the past), hope and optimism (for the future), flow and happiness (in the present) (Seligman and Csikszentmihalyi 2000). In psychology, flow is a specific mental state when doing an action through which, an actor is immersed in a feeling full of concentration, adherence to the act, pleasure, and joy when doing that act (Shafieyoun and Maiocchi 2014). The nature of affections may differ in terms of the conditions under which, emotions appear and their impacts on the human. For instance, attractiveness can improve both users' interactions and entertaining tendencies under different conditions. Therefore, a person who is attracted to a product behaves differently from another person who enjoys it (Blythe and Monk 2018). Human reactions to products are rooted in some considerations, such as design destination, interpretation in the personal field, and cultural experience (Jeon 2017). Various tools are available for designers to achieve an emotional understanding of feelings. Jungkyoon created Positive Emotional Granularity Cards that determine some conditions and visualizations of individual behavioral manifestations, as well as 25 positive emotions. The cards can be used as a tool for communication and inspiration sources in both design research and practice (Yoon, Desmet, and Pohlmeier 2016). Pieter Desmet also introduced 25 emotions that may appear when interacting with products. Robert Plutchik illustrated the theory of psychological emotions. In this wheel, 8 basic emotions are interconnected with the opposed emotion at its core. Other emotions are created from the combination of these 8 basic emotions, which are derived from one or more feelings (Borth et al. 2013). This typology helps designers to address various types of emotional attitudes in their design processes. According to the introduced structures and root of the term "Joyful," this study examines the relevant affections, including enjoyment, pleasure, fun, and happiness. Pleasure is a good emotion, which appears when hemostatic needs, such as hunger, sexual relationship, and body relaxation are satisfied. In contrast, enjoyment refers to good emotion when individuals overcome hemostatic constraints or do an act beyond their abilities, such as an exciting speech (Seligman and Csikszentmihalyi 2000).

There are sensory and experimental differences between fun and pleasure, and these two emotions can be considered different experiences in terms of distraction and attraction. This does not mean polar contrast, and it should be emphasized that these experiences are floating. Human goes far away from the self throughout the fleeting and unique experience of fun. According to utilitarian philosophers, pleasure is simple and indescribable in momentary awareness (Blythe and Monk 2018) depending on external factors that last for a short time. However, happiness appears with more deep and inner factors

that remain longer (Mandal 2019). Some steps can be taken to increase the quality of life: finding the quality of emotion in the happiness, designing for happiness, and measuring the satisfying emotions of users (Shafieyoun and Maiocchi 2014). The main challenge in happiness measurement is the difficulty of quantitative measurement of the happiness concept, which has a subjective nature (N. R. Council 2002). Moreover, many theorists have expressed different benchmarks about emotions under the category of Joyful, which have been reported in Table 1.

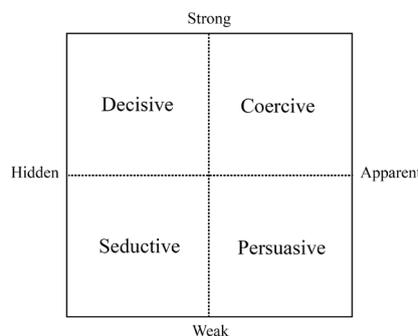
**Table 1. Benchmarks for Experiencing the Emotions related to Joyful from the View of Different Theorists**

Relevant Theories	Determined Benchmarks
Phenomenological dimensions of joy by Meadows (2014) (Pohlmeyer 2012)	Harmony and unity, vitality, transcendence, freedom
Happiness theory by Seligman (Pohlmeyer 2012)	Positive emotions, engagement, and meaning
Well-being theory by Seligman (Pohlmeyer 2012)	Positive emotions, engagement, meaning, relationships, and accomplishment
Playful experience framework (Arrasvuori, Boberg, and Korhonen 2010)	Captivation, challenge, competition, completion, control, cruelty, discovery, eroticism, exploration, expression, fantasy, fellowship, humor, nurture, relaxation, sensation, simulation, submission, subversion, suffering, sympathy, and thrill
Playful design's objectives (Simon King 2016)	Entertaining, happy, and surprising, increasing excitement of daily tasks, increasing emotion, and encouraging to change behavior

### 3. PERSUASIVE DESIGN

In his behavioral model, Tromp distinguishes four types of coercive, persuasive, seductive, and decisive influences based on two dimensions of exerting an influence (Fig. 1). Coercive design is strong and explicit in its influence, and people are aware of its influence. Therefore, change in behavior is regarded as a reaction to influence (external motivation).

Persuasive design is weak and apparent, and seductive design is weak and implicit in terms of influence. Those people who are seduced, by the design are not aware of its influence and most probably consider this behavior an internal motivation. Decisive design is strong and implicit in terms of influence, and those people who deal with it, experience their behavior as an external regulation (Tromp, Hekkert, and Verbeek 2011).



**Fig. 1. Behavioral Model**  
(Tromp et al. 2011)

### 4. BACKGROUND

Some papers were selected from 30 studies to review the background of persuasive design and its

application in the change of behavior and attitude and examine studies conducted on the happiness and improvement of user experience in urban spaces (Table 2).

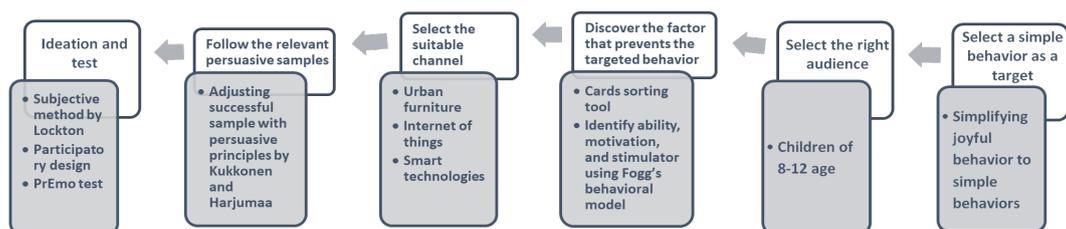
**Table 2. Studies Conducted on the Research Subject**

Title	Explanations
Tailoring Persuasive and Behavior Change Systems Based on Stages of Change and Motivation (Oyebode et al. 2021)	The authors of this study examine how individuals respond to different strategies by conducting the study on 568 participants to find why strategies change behavior based on the ARCS motivation model, the results indicated that stages of change (SoC) of individuals play a vital role in perceived persuasiveness of different strategies. this study links the SoC theory to the motivation theory and persuasive systems model to create practical guidelines.
Identifying Persuasive Design Principles and Behavior Change Techniques Supporting End User Values and Needs in eHealth Interventions for Long-Term Weight Loss Maintenance: Qualitative Study (Asbjørnsen et al. 2020)	This study presents the concept of integrating persuasive system design principles and behavior change techniques into the design process of e-health interventions to meet end-user needs and values in the frame of individual interviews and focus groups (n=23) and other stakeholders (n=27). In total, 8 key values were identified to support self-management weight loss, personalized care, autonomy, feeling supported, positive self-image, motivation, happiness, and health. Findings indicate that a combination of these principles is required to stimulate motivation and adherence to support behavior and maintain weight loss.
Personality and Subjective Well-Being: Towards Personalized Persuasive Interventions for Health and Well-Being (Abdullahi et al. 2020)	Especially, the authors investigate the relationship between five personality traits (happiness, satisfaction with life, social, psychological, and emotional well-being) and two dimensions of subjective well-being (affective and cognitive). Therefore, for users with high agreeableness, the design should be focused on promoting their feelings of happiness and social well-being, and for users with neuroticism, designers should focus on designing to promote psychological well-being and Emotional well-being. Findings offer guidelines for tailoring persuasive health interventions to promote individuals' well-being based on their personality.
Persuasive Technologies for Sustainable Urban Mobility (Anagnostopoulou et al. 2016)	This study investigates the effectiveness of the personal persuasive intervention to change the behavior of urban passengers and encourage them to select more sustainable transportation. The results indicate that the proposed approach encourages users at the personal level to change their behavior and have more sustainable choices. Moreover, the influence of persuasive interventions can be increased by personalizing these interventions and combining intervention styles (messages and visualizations), and regulating the severity of persuasive interventions based on the travel goal and transportation methods.
The playful city: constructing a typology for urban design interventions (Donoff and Bridgman 2017)	This paper investigated the intersection of scholarly findings on adults with ludic urban interventions. Twenty-seven cases of urban ludic interventions (existing and proposed) regulated for adult play and urban environments comprised a rich typology that encompasses multiple play types, important design considerations, and different implementation styles.
Images of Urban Happiness: A Pilot Study in the Self-representation of Happiness in Urban Spaces (Pringle and Guaralda 2018)	Understanding the parameters of urban happiness among different social groups is a complex issue. Digital media allows us to find what factors bring happiness in the urban environment by using image-sharing platforms, such as Instagram. These cases have been tested with residents of Australia through an online questionnaire.

## 5. METHOD

Fogg offered an eight-step method for designing persuasive systems (Fig. 2). As step 8 (i.e.,

development) is not required, this step has been eliminated in this design process, and studies are pursued up to the evaluation step. The design steps have been introduced herein.



**Fig. 2. The Method Used in this Study was Inspired by Fogg's Persuasive Design**

The first step in persuasive design is selecting the simplest and most appropriate objective, which is important as behavior is supposed to be changed. To do this, larger goals are divided into smaller ones. As

seen in Figure 3, the broad exhilarating behavior was selected in a frame of simpler and smaller behaviors within six steps (Fogg 2009).

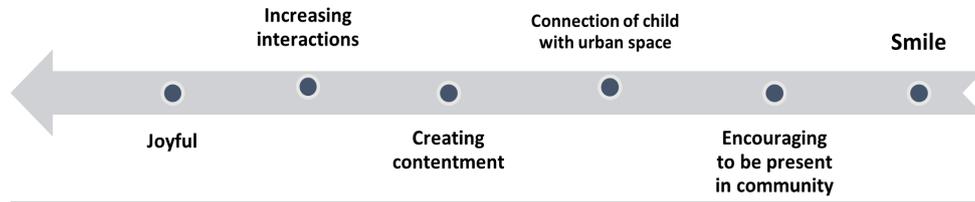


Fig. 3. Determine Targeted Behavior

It is important to focus on a few groups of users in the persuasive method. For this purpose, the target group of this step (step 2) only comprised children of 8-12 age. Cards sorting technique helps to find the elements that are important for the group we design for. It is also a rapid and simple way for starting a dialogue that leads to an accurate understanding of what is valuable (Ideo 2015). To do this, 20 urban furniture designs were selected in the third step and children were asked to classify them into three categories (persuasive, exhilarating or joyful, and

entertaining or funny) based on the sorting method. The images were chosen from the top ideas of the third competition of Creative Circle held by the Beautification Organization of Tehran on furniture design for children, as well as several top global cases. It is worth noting that each keyword was explained separately for children allowing them to sort cards with a higher concentration (Fig. 4). This test was conducted on 15 children of 8-12 age in Niavaran Park in Tehran. The urban furniture designs with the highest scores were selected (Fig. 5).

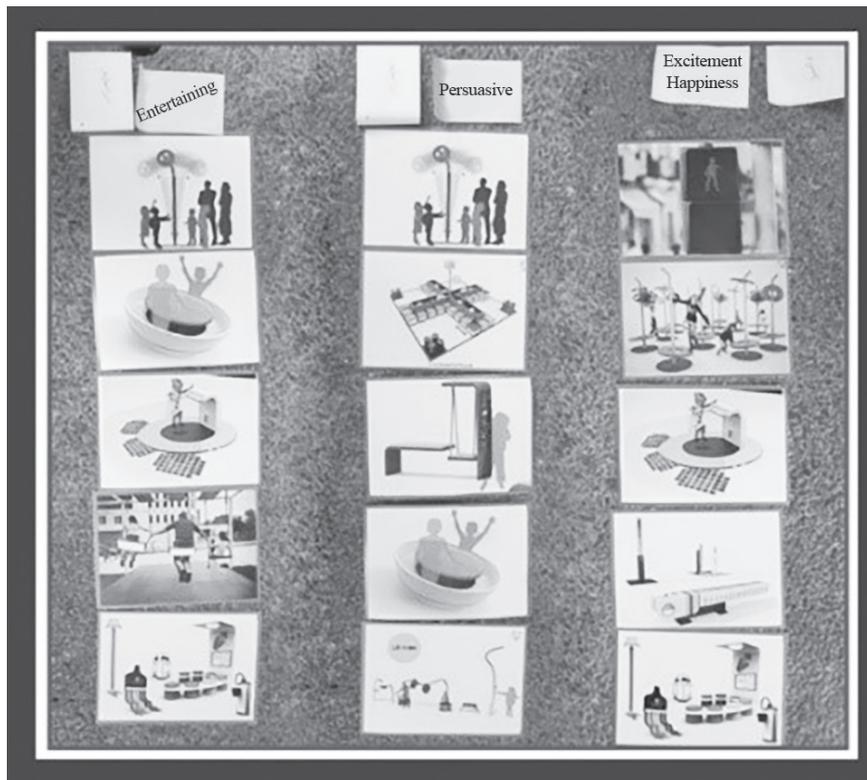


Fig. 4. Cards Sorting Test on Children

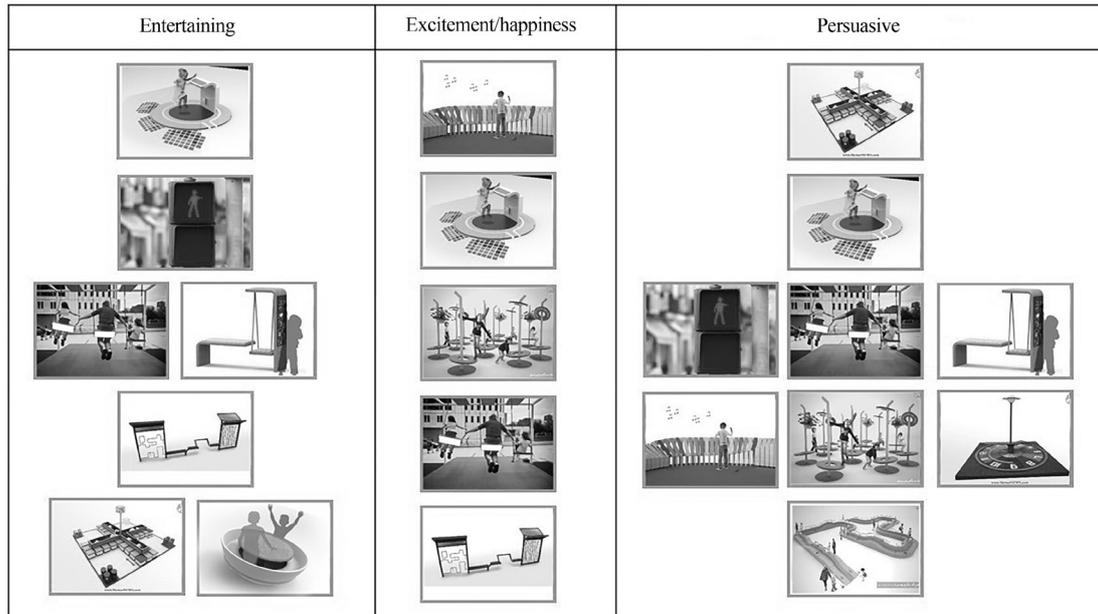


Fig. 5. Classification of Urban Furniture from the Children’s Viewpoint

The results of this step were used to identify persuasive, Joyful, and entertaining factors for children. Table 3 reports the relevant factors of each

category. Moreover, these factors were compared with the criteria obtained from Table 1.

Table 3. The Criteria Obtained from the Cards Sorting Method

Entertaining	Relevant Criterion	Joyful	Relevant Criterion	Persuasive	Relevant Criterion
Reward	Fantasy- encouraging to change behavior-increasing emotion	Music	Increasing emotions	Large-scale popular form	Simulation-nurture
Progress trend	Completion	Reward	Fantasy- encouraging to change behavior-increasing emotion	Mobility and play	Exploration-discovery-nurture-engagement
Interactive design	Exploration-entertainment	Mobility	Exploration-discovery-nurture	Rewards	Fantasy- encouraging to change behavior-increasing emotion for daily tasks
Cooperation and participation	Fellowship and friendship-meaning, positive relationships and accomplishment	Sense of floating	Happiness and being unexpected-discovery-freedom	Interactive design	Discovery-entertainment and fun
Lack of uniformity	Happiness and being unexpected-discovery-freedom	Music and light	Increasing emotions	Music and light	Increasing emotions
Music and light	Increasing emotions	Need to precision and focus	Engagement	Cooperation and participation	Fellowship and friendship-meaning, positive relationships and accomplishment
Painting	Entertainment and fun	Win and lose	Challenge-competition	Music and freedom	Increasing emotions-freedom
Familiar forms and plays	Engagement-simulation	Lose warning	Encouraging to change behavior	Sense of floating	Happiness and being unexpected-discovery-freedom
Mobility	Vitality	Lose warning	Encouraging to change behavior	Attractive colors	Fascination

Table 4 reports different types of abilities, motivations, and stimulators of the relevant subject considering Fogg's behavioral model and information obtained from field surveys and user observation as words and concepts. In this model, the person must have enough

motivation, and ability to do a behavior, and finally, a trigger must stimulate the behavior. The mentioned three factors must occur simultaneously; otherwise, the behavior does not appear (Fogg 2009).

**Table 4. Ability, Stimulator, and Motivation Required for the User**

Ability	Motivation	Stimulator
Physical ability, low subjective cycles, familiarity, form, not timely, affordance, matched with the cultural and academic condition of the child	Learning, competition, cooperation, interaction, reward	Visual stimulator, using play elements, unfamiliar and complex forms, reminding stimulator, sound and light, motion, pleasant form and attractive elements and characters, and technology

In the fourth step, the suitable channel is chosen based on the target group. In this research, the considered channel includes urban furniture, smart technologies, and facilities such as the internet of things, which have been highlighted in urban design in recent years. Kukkonen and Harjumaa have introduced the general persuasive principles that can be used with suitable qualities to design various products. These 28 principles have been classified into the frame of the primary task, dialogue, system credibility, and social support (Oinas-Kukkonen and Harjumaa

2009). This fifth step of persuasive design introduced by Fogg includes identifying, coding, and encrypting persuasive points of successful samples so that the designer can match them with the targeted objective of the research (Fogg 2009). Table 5 examines the persuasive principles introduced by Kukkonen and Harjumaa in samples with similar audiences, behavior, and channel. This is a list of principles in successful samples that satisfy the research needs for the exhilarating product for children reported in Table 6.

**Table 5. Existing Design Samples**

No.	Image	Design Explanation
1	 (Harrouk 2019)	This design was installed and set up in winter in Montreal and was selected for an annual event in summer. Seesaws' movement affects the lights and speakers, and 30 seesaws move coordinately and create a moving composition.
2	 (DiStasio 2016)	Simple pulling and pushing motions activate sounds and animations in the loops allowing people to see images that create an illusion of motion. With a retro-futuristic style, this complex has a 2m diameter that creates some stories by stimulating the imagination of children and their parents.
3	 (Mlot 2017)	This trashcan addresses how digital technologies are used to stimulate positive changes in the urban space. It also makes an ordinary act of putting trash in the garbage into a funny event by using playful techniques, play mechanics, and play thinking.
4	 (Lisa 2013)	This interactive design has 10 chairs that use musical notes of a piano, guitar, a vibraphone, and a harp. When chairs are used collaboratively then music is played.

No.	Image	Design Explanation
5	 (Perna 2018)	This design was implemented in the fall of in Bristol, 2014. People could find the hidden places of eight street lights playing and shadowing in unexpected routes.
6	 (Idesignawards 2014)	This design allows playing music in a public park creating a social activity and social interaction through play. This is a symbolic action that adds activity to the space.
7	 (Zisiadis 2015)	This playful bench encourages you to experience fun with others even strangers. You can rotate the bench making it go around by pushing your feet in collaboration with another person.
8	 (Velev 2016)	This is one of the classic games played in the 1970s (snake) allowing players to control the line of a fountain. They take a start position and one color. As the snakes' length extends, they should not be in the sequence of their place.
9	 (Recife 2014)	This design was developed by the cultural exchange laboratory of Recife in 2014 to create communication between people and music by installing objects on the city walls linking strangers with each other and with urban space making surprising and joyful moments.

**Table 6. Persuasive Design Principle in Existing Samples**

	Principle	Rule of Selected Samples
Primary Task	Reduction	Swinging: playing improvised music without training. Creating motion and keeping balance with familiar forms (seesaw). Interaction based on joint targeting
	Tunneling	Using Belz (most children can play it) and familiar classic games. Marking the product for direction. Using legible forms and suitable affordance
	Tailoring	Using light, sound, and motion for most children is comprehensible except for exceptional cases
	Simulation	Various oscillations are parallel to different notes. Exhibiting colorful pixels by throwing trash in the trashcan in a playful process
Dialogue	Praise	Cooperation with other users allows them to listen to music.
	Reward	Various motions and playing different music genres. Motion, sports, and displaying animated images and motion pace change and changes in the light and images. The surprising user using various lights and sounds
	Similarity	Offering users familiar and classic games, such as swimming and seesaw, and surprising use with music and light. Some loops that remind cinema
	Liking	Light movement in space
	Social Role	Collaborate and play music. Two persons must move coordinately to rotate the bench.
	Trustworthiness	Familiar forms are more reliable for the child.

	Principle	Rule of Selected Samples
System Credibility	Expertise	Creating new user experiences in most designs
	Authority	Sense of authority through physical motion and seeing feedback through light and sound
	Social Learning	The placement of many swings, seesaws, loops, etc. allows users to see others' behavior and learn something
Social Support	Social Comparison	The installation of a few hatches for throwing trash allows users to compete and compare their performances.
	Normative Influence	Urban furniture that needs interaction and allows people's attendance in the environment reduces vandalism.
	Social Facilitation	Doing collective hobbies and activities that cannot be done individually.
	Cooperation	Doing physical motions and cooperation to play music.
	Competition	Garbage is thrown into the trashcan in a competitive form.

### 5.1. Ideation and Test

It is highly critical to consider the user while designing, and the importance of the method engaged in that process in the current design world (Sakornsathien, Sinthupinyo, and Anuntavoranich 2019). To make users involved in the design process, children were asked to briefly write the urban elements they like

or do not like and then draw a picture of a bench. The schemas obtained from this step were integrated into ideation techniques (Fig. 6). The proper ideation technique in this step includes the subjective method by Lockton, which comprised 8 lenses and 101 techniques (Lockton 2016). Relevant techniques were extracted and presented as some questions for ideation, which are reported in Table 7.



Fig. 6. Participation of Children in the Design

Table 7. Selected Techniques of Lockton's Subjective Method and Asked Questions

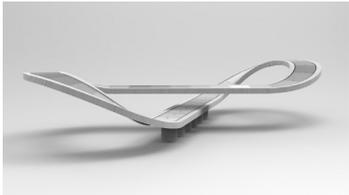
Technique	Questions Asked about the Subject
Adjusted Affordance	Is it possible to produce pieces only in accurate times or tailor them only to the products they must do?
Challenges and Objectives	What happens if the user faces challenges when trying to achieve the goals?
Playing	Is it possible to design an object that can play with the user, stimulate his/her curiosity, and convert interaction into a game?
Rewarding	Is it possible to encourage the user to continue the path by rewarding them?

Technique	Questions Asked about the Subject
Storytelling	Is it possible to tell a story in design to make the user more interested and engaged?
Perceptual Affordance	Is it possible to create a form that offers the user a certain behavior?
Stimulating Atmosphere	It is possible to use sensory stimulation (sound, light, adore, etc.) to encourage people to show a specific behavior?
Habits	It is possible to make the behavior a habit or routine?
Personalization	It is possible to give a personality to the system allowing use communicate with it?
Individual's Behavior	Can you change the available current options of users based on their present or previous behaviors?

The top ideas were examined, by using persuasive design principles and their affiliated subsets as a combination of targeted behaviors to achieve a design with harmonic elements based on the data extracted

from field studies. This combination was prepared in the frame of three final designs of colored and render pictures. Table 8 indicates these designs and their explanations.

**Table 8. Obtained Ideas**

Number	Picture	Explanation
Design 1		The idea of this design was adopted from the combination of a popular game for children and adults called Domino and sitting place, and some curiosity helps a person notice that the bench's floor raises. The tendency to discipline and the familiar form of Domino for individuals make users interact and engage with the bench. Moreover, the varying height of the bench makes it usable for all age groups.
Design 2		This design is shaped by three ideas of using familiar forms (spinner) integrated with music and motion. Attempt to keep balance, collective participation, and improvised music are persuasive for the child. Spinner form in an urban environment is pleasant for all walks of society because its form implies motion, dance, and happiness.
Design 3		This is the design of a light inspired by a decorative object namely a musical ball, which is attractive to all people, especially children. A row of these lamps on the sidewalk creates a dreamy route for pedestrians. When pedestrians walk on some carpets, snowflakes in the glass are suspended in the air. The more the number of steps and contacts, the more snowflakes are suspended and subsequently the stronger the light will be.

Among self-report methods that are based on the target group of children, PrEmo is the most suitable method because of using pictures and sound. PrEmo is a non-verbal self-report tool that measures 14 emotions raised by product design. These emotions include seven pleasant (pride, admiration, joy, hope, satisfaction, desire, fascination) and seven unpleasant (shame, contempt, sadness, fear, anger, disgust, boredom) emotions. Respondents can express their feelings using cartoon animations instead of words (Blythe and Monk 2018). Therefore, a five-point Likert scale was considered for each character, and

questionnaires were distributed among 10 children in the age range of 8-12. In addition to images, some words were added to characters to make them more comprehensible for children, and some irrelevant characters that were less understood by children were removed. Happiness, pride, fascination, joy, surprise, desire, fear, unpleasant and bored emotions were evaluated. Some dialogues were held when watching images to review users' ideas. According to children's ideas, color had a considerable influence on the score of design 1.

## 6. THEORETICAL AND PRACTICAL FINDINGS

The data obtained from the PrEmo method have been depicted as spider charts in Figure 7. According to dialogues, children had no clear image of design

3. Hence, it seems that child must be exposed to a prototype to understand this concept and find more accurate results. However, explanations indicated that the two first designs were comprehensible for children.

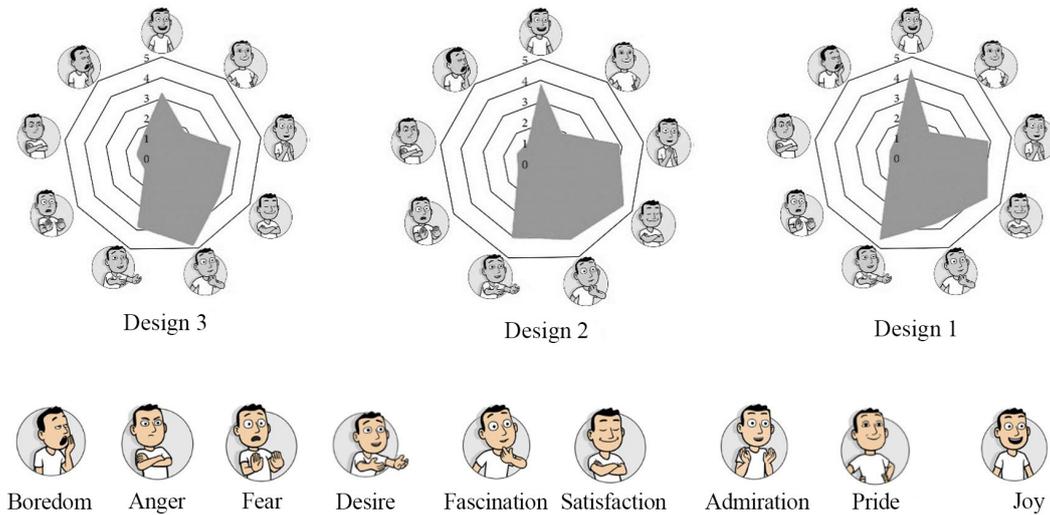


Fig. 7. Result of PrEmo Test on Five-Point Likert Scale (5=very high, 1=very low)

## 7. DISCUSSION AND CONCLUSION

This study indicated that stimulators and elements added to create external motivations and different emotions were influential. According to dialogues with children, it was clear that they had less interaction with the urban environment, which is limited to parks and shopping malls. Children and their parents walk in urban passages in a rush without paying attention to the surrounding environment due to families' lifestyles. However, children are interested in being present in urban environments rather than at home. In the first step of the study, images displayed for children make them eager and encouraged to follow pictures until some questions were asked about the location of displayed images. The urban environment is beyond a place for passage, which must be revised in most cities to use its potential periodically in different events to improve the mental health of cities. Investigations indicate that this persuasive

system can influence all behaviors, interactions, and relationships between children and between the child and the city. Although effective variables must be considered to measure the emotions of children due to their various characters, the results of the PrEmo test can indicate the extent of the increase in a positive emotion of the user. Precise measurement of emotions regarding the urban design was not required in this study. The outcome of this study is more than three ideas presented in Table 8 since many ideas can be derived from each step. Technology advances, smart cities, and the application of the intent of things help to implement persuasive elements in the city and urban furniture in a chain. This study paves the way for designing exhilarating and enjoyable products as a novel design technique in line with positive feelings by using persuasive design. The significant role of this tendency in human life and the high potential of persuasive principles can be pursued in a wider range of subjects and users.

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