Entertainment Computing 36 (2021) 100390

Contents lists available at ScienceDirect

Entertainment Computing

journal homepage: www.elsevier.com/locate/entcom

Playful-consumption experiences and subjective well-being: Children's smartphone usage☆

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ARTICLE INFO

Keywords:
Playful-consumption experiences
Smartphone usage
Subjective well-being
Children
PLS-SEM approach

ABSTRACT

The study aims to investigate the factors that contribute to children's subjective well-being. We used playful-consumption experiences in children's smartphone usage to determine their subjective well-being. In total, 210 valid responses were obtained from the parents and analyzed using PLS-SEM in SmartPLS 3.2.8. The results of the measurement model revealed that the investigated constructs were reliable and valid. The findings based on the structural model revealed that children's emotional involvement, enjoyment, and sensory experiences with smartphones positively influenced their subjective well-being. However, children's fantasy, escapism, arousal, and role-projection experiences with smartphones failed to impact children's subjective well-being. The study is among the pioneers to investigate children's subjective well-being from the perspective of smartphone usage and playful-consumption experiences.

1. Introduction

Children's interest is rapidly changing from engaging with traditional media such as television and radio to digital technologies such as smartphones, tablets, laptop, and other interactive media [50,52]. This could primarily be attributed to the fact that smartphone interfaces are relatively more appealing to younger audiences [61]. With the advent development in technology, children's learning processes are also embedded in smartphones. It is evident that the usage of some smartphone applications improve children's cognitive skills and sustaining their subjective well-being [10,37].

The subjective well-being is "an individual's belief that life is pleasant, happy, desirable, and being satisfied emotionally" [58]. Though smartphones usage can enhance individuals' subjective well-being, a few researchers have found that some factors such as problematic internet usage [9,38,65], excessive smartphone usage [17,61], immoderate screen time [63], and videogame addiction [5,44] negatively impact subjective well-being. While other studies have some factors positively impact subjective well-being such as improved social relations, increased social support [49], social capital [5], and computer/mobile game usage [37], and smartphone usage for communication purposes [5,11,45]. Though there are tangential findings in past research, we argue that in general, the conditions to the smartphone usage can create ubiquitous learning and facilitate children's developments and well-being if it is used appropriately.

Though there are many studies on smartphones, technologies and usage, however, most of these studies are limited to the investigation of technology usage on adult's subjective well-being while understanding how the usage of smartphones in gaining playful consumptions experience results in children's subjective well-being has not explored. This study has overcome this gap by applying the playful-consumption experience theory in smartphone usage context in efforts to determine children's subjective well-being.

2. Hypothesis development

Seven factors of playful consumption experience of smartphone usage are proposed as possible determinants to predict children's subjective well-being.

☆ This paper has been recommended for acceptance by Antonio Roda', Ph.D. (Where Antonio Roda', Ph.D is the name of the Handling Editor).

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https://doi.org/10.1016/j.entcom.2020.100390
Received 2 November 2019; Received in revised form 5 July 2020; Accepted 15 September 2020
Available online 19 September 2020

2.1. Children escapism and subjective well-being

Escapism is a desire to escape undesirable realities of the world and experience repose [14]. Due to digital innovation, the involvement in video games among youngsters and children is on the rise. In many instances, video game platforms provide gamers will many benefits. As such, people are interested in finding relief from their frantic work routines, and hence, are always looking for stimulating activities that can relax and entertain them [32]. Past research has shown that children's engagement in games has a positive effect on their well-being [36]. It has been established that escapism due to video games also had a positive impact on children's physical and emotional engagement [53]. Therefore, for children, escapism experiences are tempting and much more than just getting out of the unwanted realities of the world, which in turn improves their well-being. Hence, we hypothesize that:

H1. Children escapism from reality has a positive relationship with their subjective well-being.

2.2. Fantasy in games and subjective well-being

Fantasy is an individual experience that guides some desires concerning the situation at hand. Fantasy is often illusory or a fictional experience that conveys what others ruminate about creation, affiliation, performance, and life [26]. Previous studies identified fantasy as a potent force in digital media. For instance, children attain inspiration from cartoon characters [30]and they easily embrace cartoon models and follow them in their daily undertakings. The world of created fantasies in gaming gives gamers the perfect platform to enhance their creativity and capabilities. Therefore, we postulate that the positive imitation of cartoon characters by children would lead to their well-being (through the adoption of brands and products). Hence, we hypothesize that:

H2. Fantasy in games has a positive association with children's subjective well-being.

2.3. Role-projection and subjective well-being

Role-projection is a mental process that allows individuals to project themselves in a particular role or character [3]. Role-projection generally transpires when people indulge in entertainment-related experiences such as movies, novels, operas, and videogames [66]. An earlier study has established that role-projection is a key factor behind video game engagement [43]. Children's' digital media usage may facilitate them to project themselves in a particular character or role [29]while watching cartoons or attending other forms of media. All this can provide children with some comfort and as a result, improve their subjective well-being. Therefore, we hypothesize that:

H3. Role-projection has a positive relationship with children's subjective well-being.

2.4. Enjoyment and subjective well-being

Enjoyment has various indicators, such as amusement, melodrama, and media aesthetics [54]. Though media products do create a sense of pleasure but not necessarily all induce enjoyment [48]. Generating enjoyment is critical as it promotes entertaining experience via affective, behavioral, and cognitive channels [34]. If individuals are unreservedly enjoying a playful experience, they will most likely wish to continue further playing [35]. Enjoyment is a highly persuasive determinant that entreaties children to continue playing digital games [60]. In view of the above discussion, we hypothesize that:

H4. Enjoyment is positively associated with children's subjective well-being.

2.5. Emotional involvement and subjective well-being

Emotional involvement relates to individuals' psychological engagement either for a short or long time with varying levels of intensity [66]. Sustained involvement in the activity can induce emotional involvement [47]. Emotional involvement positively influences the level of interest in an activity [39]especially for entertainment-related experiences [40]. Video games played extensively can potentially increase children's' emotional involvement, which in turn positively influences their subjective well-being [7]. Hence, we hypothesize that

H5. Emotional involvement has a positive relationship with children's subjective well-being.

2.6. Arousal and subjective well-being

Arousal connotes the emotional activation, excitement, or alertness elicited by external sensory stimulation [66]. Arousal state augments situation awareness [47]. Smartphones that are used for playing video games engender elevated levels of arousal [15]and thus, creating engagement with smartphones [25]. For instance, children experience elation while reacting to external stimuli in videogames, which improves mood and feelings such as enjoyment [48]. Arousal state enriches situational experiences and as a result, can lead to improved well-being. We, therefore, hypothesize that:

H6. Arousal is positively associated with children's subjective well-being.

2.7. Sensory experience and subjective well-being

Sensory experience refers to perceiving multi-sensory feelings such as sound, touch, and sight [2]. The progression of touch-screen technologies has made it possible for children to gain sensory literacy via digital media [46]. Nowadays, videogames are much more responsive with different types of user experiences calling for cross-modal interaction such as swiping, tilting, tapping, shaking, and dragging [46]. Also, with the advent of virtual and augmented reality games as well as haptic technologies, the sensory experiences have been exploited to tremendous effect in today's digital applications. Such experiences can satiate children's internal drive and positively influence their well-being [46,51]. On this ground, we hypothesize that:

H7. Children's sensory experience in smartphone usage has a positive influence on their subjective well-being.

3. Methods

The study employed a cross-sectional design for collecting data from the targeted participants. This approach is most suitable for acquiring information about participants' beliefs, attitudes, and behaviors [19]. Our participant's pool was limited to children aged 2–8 years who actively use smartphones for entertainment purposes. We collected data from parents of the children as the children of this age group were unable to respond to the survey [52].

We did not directly enquire about the responses from children due to issues of erroneous data and as a result, proceeded towards collecting data using observer reports rather than self-reports. Observer reports were developed to enquire parents to report their children's smartphone playful-consumption experiences and subjective well-being. It is undeniable that children's subjective well-being could be a complicated phenomenon, especially when it comes to young children. With the sample of children aged 2–8 years, it could be logical and reasonable to assume that their subjective well-being can be made with reference to fears and social network characteristics, which are observable. This method is aligned with the study of Lahikainen et al. [41] who approached parents to complete the questionnaires on children's psychosomatic symptoms, worries, and behavior characteristics to reflect children's well being. Another fundamental reason was the family's

concern and contribution to the children's subjective well being [42]. We do not deny that there is a growing interest in children's subjectivity and well-being, but, due to the ability of the small children to express their subjective well-being (other than children's psychologists, psychiatry, or experts), the interest in empirical investigation is scarce. With this in mind, our predominant argument is that, by using the parents' perceptions, the subjective well-being could also be hinged to a continued positive state of events and development (and the ability to cope with the inherent uncertainties of life). The parents are capable to understand and protect their children especially when children are exposed to feelings of helplessness and insecurity, and the inability to cope with these difficulties and obstacles encountered. Though there is the residuality of the experience of insecurity (or inner feeling of children, that are incomprehensible), it makes sense that the physical reflection is vivid.

We developed observer reports using inquiries, for instance, as a parent, do you observe that your child uses a smartphone to get away from problems and pressure (Escapism item1), your child uses a smartphone to escape from unpleasant and worrying things (Escapim item2), see appendix A for a study questionnaire. We used the five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) to record the feedback from parents.

G*power analysis was used to determine sample size as this analysis has the predictor power in recommending an adequate sample size for performing Partial Least Squares – Structural Equation Modeling (PLS-SEM) analysis Hair et al. [24]. Adhering to the guidelines by Faul et al. [18], we selected the following input parameters such as F-tests, Linear multiple regression: fixed model, R^2 deviation from zero, and a priori: compute required sample size – given a power and effect size". Besides, we designated effect size $f^2 = 0.15$, a error prob = 0.05, power (1-ß err prob) = 0.95, and number of predictors = 7. The G*power suggested a minimum sample size of 153 to perform the analysis of the proposed model using the PLS-SEM technique.

The questionnaire was divided into two sections. Section one on demographics capturing the basic information on gender, education, age, smartphone usage patterns, and hours spent on smartphone usage. Whereas, section two presents study variables such as smartphone-related playful-consumption experiences and subjective well-being. The playful-consumption experience scale comprised of seven dimensions namely escapism, role-projection, fantasy, arousal, emotional involvement, enjoyment, and the sensory experience was adapted from [1]. The subjective well-being scale was adapted from [12].

The data collection vicinity was the twin-cities (named Islamabad and Rawalpindi) in Pakistan. The data from these cities establish a better representative sample as people from other parts of the country work in these cities, thus showing a diverse group of parents [16]. The respondents were approached in popular places such as family parks (Ayub Park and Jinnah Park) and shopping malls (Giga mall and Centaurus mall). Mall-intercept survey technique [57,59]was used while collecting data from shopping malls, whereas convenience sampling was used at family parks [4]. The participants were asked a few questions in advance to make sure that they have small children and the children use smartphones. For instance, the questions were, do you have small children aged from 1 to 8 years old? Do they frequently use a smartphone? How old is he/she? How long has your child been using a smartphone for? For what activities does your child use the smartphone? Once we realize the respondent is the right fit to our study, we then handed over the questionnaire (observer report) requesting to rate the smartphone-related playful-consumption experiences and subjective well-being of their children. We managed to get 210 valid responses. The detail is provided in Table 1.

Table 1
Detailed Information of Respondents.

Gender	%
Male	43.8
Female	56.2
Age	
1–2 yrs.	22.4
3–4 yrs.	45.2
5–6 yrs.	24.8
7–8 yrs.	7.6
Education	
Not-going to school	22.4
Pre-school	20.0
Kindergarten	42.4
Primary level	15.2
Hours spent	
1–2 hrs	59.0
3–4 hrs	24.3
5–6 hrs	8.6
Above 6hrs	8.1
Children smartphone usage (each percentage is calculated from 100)	
Playing Games	48.6
Watching YouTube	74.8
Use while eating	22.4
Time Period	
6 months	27.6
12 months	25.7
1.5 years	34.3
2 years	9.0
Above 2 years	3.3

4. Results

Based on valid cases, this study used the PLS-SEM technique [22] and predictive model-evaluation [55]. PLS-SEM is a kind of multivariate statistical analysis tools to concurrently examine the relationships based on a study model [23]. PLS-SEM is a two-step process [21]. In the first phase, the PLS algorithm is calculated to assess the reliability and validity of the constructs used in the study. The effects are then tested in the second step using a structural model through bootstrapping. The SmartPLS 3.2.8 version was used. The reflective measurement models were employed for the study following Abbasi, Ting, Hlavacs, Costa, et al. [2]. The suggested threshold for the outer loading is 0.60 or above, Cronbach's Alpha and composite reliability are to be 0.70 or greater. To capture the convergent validity, the average variance extracted (AVE) must be (>0.50). In our results, we found that all constructs have met the threshold values of being sound and reliable constructs. The details of the statistical results are provided in Table 2.

We also used the Heterotrait-Monotrait (HTMT) ratio of correlations as recommended by Henseler et al. [28] to examine the discriminant validity of reflective constructs. Table 3 showed that discriminant validity is not an issue for our study because the values in the HTMT table do not surpass the critical be of 0.85.

Next, we examined the structural model to verify the study hypotheses as proposed in Fig. 1. SmartPLS 3.2.8 was used to perform the bootstrapping approach with a resample of 5000 as recommended by Hair et al. [24]. The results, as shown in Table 4 and Fig. 2, shows that children's enjoyment, emotional involvement, and sensory experience in smartphone usage context have a significant positive influence on their subjective well-being. However, escapism, role-projection, fantasy, and arousal have no impact on children's subjective well-being.

Results showed that the values of R^2 and Q^2 (Stone-Geisser) on the dependent variable are 0.483 and 0.364, which indicates that the model has enough predictive relevance. We also examined the model fit using the standardized root mean square residual (SRMR) as the approximate model fit criterion as advised by Henseler et al. [27]. The SRMR value should be lower than 0.08 for being an adequate fit for PLS path models. In our study, we found that the SRMR value is 0.06, and hence, it confirms an adequate model fit.

5. Discussion

In this study, we aimed to investigate the factors influencing

Table 2
Measurement model assessment.

Constructs	Items	Loadings	Cronbach's alpha	Rho_a	Composite reliability	Average Variance Extracted (AVE)
Escapism	E1	0.904	0.932	0.935	0.952	0.831
	E2	0.935				
	E3	0.904				
	E4	0.904				
Fantasy	F1	0.772	0.767	0.767	0.866	0.684
	F2	0.867				
	F3	0.839				
Role-projection	RP1	0.771	0.884	0.866	0.894	0.679
	RP2	0.816				
	RP3	0.827				
	RP4	0.878				
Enjoyment	EN1	0.808	0.899	0.899	0.93	0.77
	EN2	0.903				
	EN3	0.911				
	EN4	0.884				
Arousal	A1	0.761	0.726	0.843	0.839	0.636
	A2	0.724				
	A3	0.897				
Emotional involvement	EI1	0.891	0.883	0.885	0.928	0.811
	EI2	0.916				
	EI3	0.894				
Sensory experience	SE1	0.726	0.866	0.873	0.899	0.599
	SE2	0.723				
	SE3	0.79				
	SE4	0.787				
	SE5	0.848				
	SE6	0.764				
Subjective well-being	SW1	0.918	0.919	0.924	0.943	0.805
	SW2	0.931				
	SW3	0.837				
	SW4	0.899				

Table 3
Discriminant Validity.

	AR	EI	EN	ES	FA	RP	SE	SW
Arousal								
Emotional involvement	0.218							
Enjoyment	0.138	0.708						
Escapism	0.068	0.597	0.824					
Fantasy	0.140	0.185	0.165	0.158				
Role-projection	0.268	0.054	0.17	0.254	0.05			
Sensory experience	0.801	0.602	0.47	0.430	0.228	0.220		
Subjective wellbeing	0.215	0.685	0.642	0.526	0.171	0.055	0.567	

Note: AR-Arousal, EI-Emotional Involvement, ES-Escapism, FA-Fantasy, RP-Role-projection, SE-Sensory Experience, SW-Subjective Well-being.

children's subjective well-being. We applied the playful-consumption experiences to capture children's smartphone usage related experiences and their role in predicting their subjective well-being. We found that children's smartphone-related experiences, such as sensory experience, enjoyment, and emotional involvement, have a significant positive effect on predicting children's subjective well-being. Our findings are in-line with the emotional involvement conducted by[31]and enjoyment studied by [66].

In our study context, parents have always wanted the best for their children. Children are the future bearers to family success [8]and these proud moments can be celebrated when success is observed. Therefore, many parents are careful when dealing with their children's well-being. When there is a positive emotional involvement, it will provide the children with the ability to manage and control emotions and feelings and solve problems of a personal and interpersonal nature. On top of that, it will also enhance the ability to be optimistic and coping behavior [6]. When children are engaged in game playing, they are engaged in an experience that satisfies their desire, goal, or need, as well as fell the sense of meaning, security, esteem, belongingness, or love which are important to build positive characters. The sensory experiences playing the games would develop the children's ability to develop nerve connections in the brain, as well as support language development, cognitive growth, motor skills, problem-solving skills, and social interaction. More importantly, parents mediate in children's smartphone usage activities (like watching cartoons on youtube, playing games, etc) through using the co-use and active strategies of parental mediation [33]. While in co-use strategy, parents actively participate with children in their playful environment [13,33] i.e. smartphone usage. Parents and children together feel emotions such as enjoyment, emotional involvement, and sensory experiences in playful activities relating to their smartphone consumption. Such experiences positively determine children's subjective well-being. In active parental mediation strategy, parents usually give instructive guidance such as talking and discussing with children about the content or games which they can engage in or play [13]. Parents are well aware of content or games that can help their children to experience enjoyment, emotional involvement, and sensory modalities. Hence, active and co-use parental mediation in children's smartphone usage may generate more meaningful and useful experiences that ultimately impact on children's subjective well-being.

On the other hand, children's fantasy, escapism, arousal, and role-projection experiences with their smartphone usage are not considered as enhancing subjective well being. Next, we debate on each factor in accordance with the existing literature. In our study, children's escapism experience with smartphone fails to determine their subjective well-

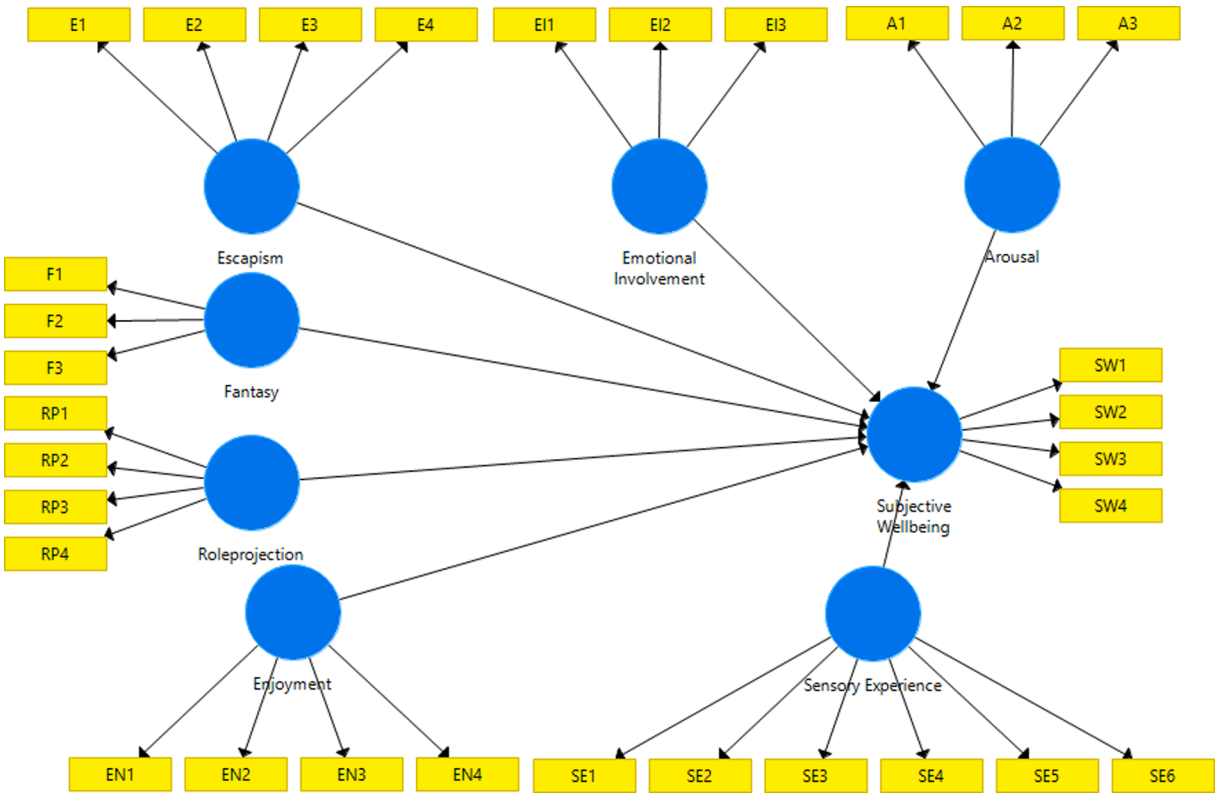

Fig. 1. Study framework.

Table 4
Structural model assessment.

Hypotheses	Original sample (o)	Sample mean (m)	Standard deviation (stdev)	T statistics (|o/stdev|)	P values	F2	Decision
H1: Escapism -> subjective wellbeing	0.018	0.028	0.080	0.228	0.410	0.000	Not Supported
H2: Fantasy -> subjective wellbeing	0.007	0.018	0.049	0.136	0.446	0.000	Not Supported
H3: Role-projection -> subjective wellbeing	−0.014	−0.023	0.078	0.177	0.430	0.000	Not Supported
H4: Enjoyment -> subjective wellbeing	0.271	0.271	0.085	3.193	0.001	0.050	Supported
H5: Emotional involvement -> subjective wellbeing	0.306	0.303	0.075	4.103	0.000	0.089	Supported
H:6 Arousal -> subjective wellbeing	−0.062	−0.040	0.065	0.957	0.169	0.004	Not Supported
H:7 Sensory experience -> subjective wellbeing	0.269	0.253	0.079	3.402	0.000	0.051	Supported

being. This finding is in line with the previous study [62] where escapism did not influence expectancy for character growth. However, this finding is contrary to [66] study but this could be due to the reason that children, at the very early stage of their lives, are free from day-to-day pressures. Another reason could be that the previous study was conducted using the adult sample, and the difference could be due to the age difference. Fantasy and role-projection factors associated with children's smartphone experiences did not influence subjective well-being. This finding is in line with the previous work [66], who reported that users who are not able to attach their imagination to a videogame or media fail to project themselves into specific roles or characters. This may be true while considering the children as they are too young to create fantasies and project themselves into a specific character. Our findings showed that children's imaginal experiences with smartphone usage fail to determine subjective well-being, this situation could be due to the parental mediation. In Pakistan, parents are usually authoritarian in their parenting style[67]and therefore, they actively mediate in children's smartphone usage through active and restrictive mediation strategies[56]. When parents observe negative effects in their children such as experiencing the state of fantasy, role-projection, and escapism then they impose restrictions on their screen time or limit the activity that is mostly engaged by their children.

Arousal is another factor that did not explain the subjective well-being of children. This finding is conflicting with prior studies[31,66]. This could be due to our targeted sample, i.e. young children aged between 2 years to 8 years. Moreover, previous studies were conducted in the videogame settings, whereas, our context is within the smartphone usage setting. There may be another reason that parents may restrict their children to experience arousal state with their smartphone consumption as arousal may cause addiction to smartphone usage.

Previous studies did not include an emphasis on the children's subjective well-being, either on the positive or negative note. However, this study is the first to extend the body of knowledge through utilizing the playful-consumption experiences regarding children's smartphone

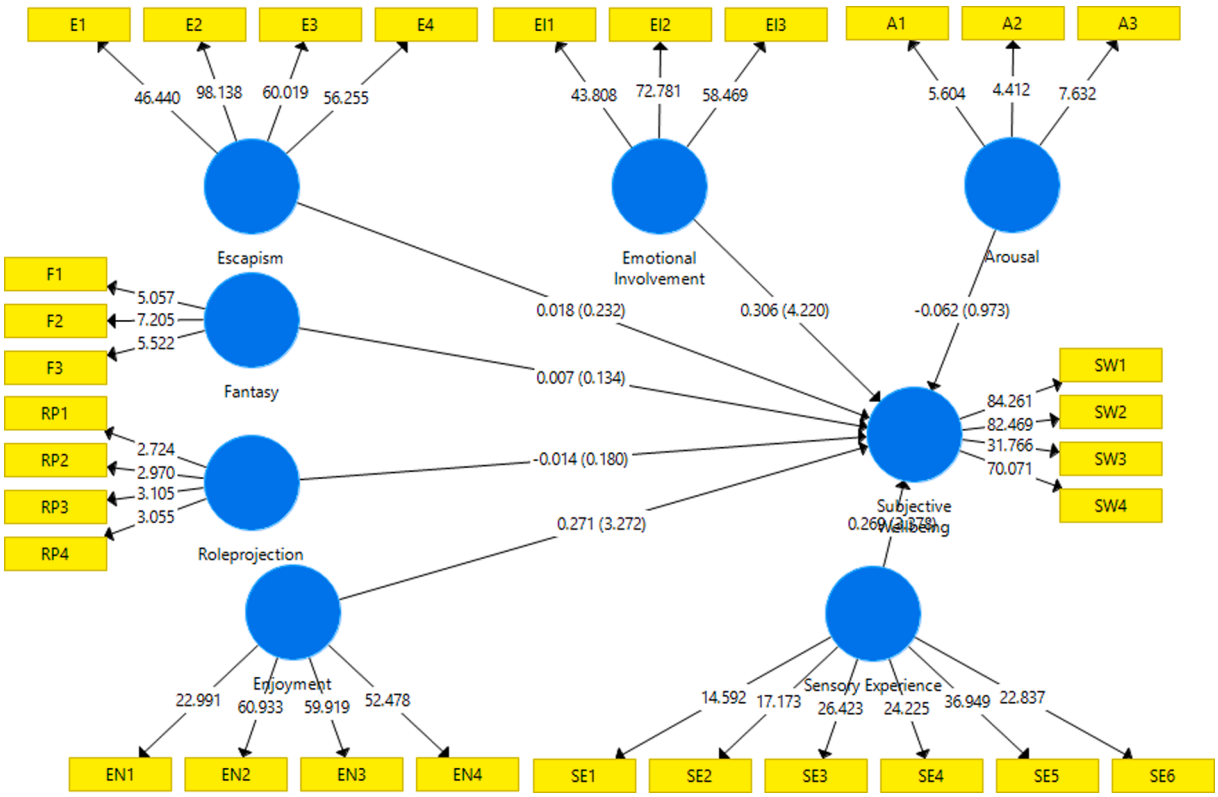

Fig. 2. Study framework with hypotheses testing.

usage in efforts to determine their subjective well-being.

This study has s few limitations. First, the study is conducted for children, and therefore the results are limited to children's smartphone usage. Second, the study is conducted in a developing nation with collectivist values. Future studies can extend to adolescents to capture their smartphone usage experiences on predicting subjective experience. Third, we limit our focus towards predicting children's subjective well-being through playful-consumption experiences of smartphone usage. Another study is much needed that could explain the factors which negatively influence children's subjective well-being. Future studies can further cross-validate the results in different countries and cultures. Fourth, while assessing the children's subjective well-being through observer reports, we do not deny that the perception might not be fully capturing the actual children's well being, which is part of our study limitation, but the observed children's behavior could be an integral reflection of their subjective well being and less haphazard. Hence, another study may apply the self-reports targeting teenagers to investigate how playful experiences relating to smartphone usage do influence their subjective well-being. Fifth, we did not focus a particular playful activity in children's smartphone usage such as playing a game, any specific genre of game playing or watching cartoons on youtube, just to name a few. Therefore, another research may replicate our framework focusing on any specific playful activity in children's smartphone consumption to compare and validate our study findings.

6. Conclusion

Subjective well-being is an indicator of positive mental health in children. With moderation of smartphone usage for video gameplay and involvement in the interactions with the screen for playful activities is considered a potential contributor to children's subjective well-being. We investigated playful experiences in children's smartphone usage to determine their subjective well-being. The study results concluded that children's playful experiences such as enjoyment, emotional involvement, and sensory experiences are contributing factors to children's subjective well-being. Parents must play important roles in ensuring that their children have a controlled and regulated time and interactions with the smartphones. Therefore, there is no doubt that the concept of well being is produced, reproduced, and maintained by seeking protection. Being within the proximity of protective people, children learn about the environment as well as cope with threats and solve problems [20]. This situation is true among young children, who are very dependent on others for protection [64].

Declaration of Competing Interest

The authors declared that there is no conflict of interest.

Appendix A. Study questionnaire

Being a parent, do you observe that

	Escapism
1	Your child uses smartphone to get away from problems and pressure.
2	Your child uses smartphone to escape from unpleasant and worrying things.
3	Your child uses smartphone to get away from reality.
4	Using smartphone makes your child feel like I am in a different world of reality
	Fantasy
1	Using smartphone does not stimulate your child's imagination
2	Using smartphone helps your child create daydreams
3	Using smartphone helps your child augment reality.
	Role Projection
1	Using smartphone enables your child to project his or her self into a particular role.
2	Using smartphone enables your child to project his or her self into a particular character.
3	Using smartphone enables your child to project his or her self into a particular task.
4	Using smartphone enables your child to project his or her self into someone else.
	Enjoyment
1	Using smartphone is not really fun to your child
2	Using smartphone provides a lot of enjoyment to your child in his life.
3	Using smartphone is enjoyable to your child.
4	Your child enjoys while using smartphone.
	Emotional Involvement
1	When your child uses smartphone, he or she feels deeply about the smartphone
2	When your child uses smartphone, he or she gets involved into the smartphone
3	When your child uses smartphone, he or she carries the experience for a while
	Arousal
1	Using smartphone makes your child inspired.
2	Using smartphone makes your child wide-awake.
3	Using smartphone makes your child motivated.
	Sensory Experience
1	Using smartphone influence your child physical movement.
2	Using smartphone your child adapts sudden action, as a reaction to certain situation.
3	Using smartphone makes your child feel the physical experience of the phone.
4	Using smartphone stimulates your child emotions to adapt and react accordingly (e.g. Child play aggressively with aggressive music, play calmly with soft music and react in fear to a horror music etc.)
5	The scenic beauty of smartphone is aesthetically appealing your child.
6	The visuals of Smartphone fill his appetite for unique and different structure, shapes and design.
	Subjective Wellbeing
1	Using the smartphone makes your child feel happy.
2	Using the smartphone makes your child feel energetic.
3	Using the smartphone makes your child feel relaxed.
4	Using the smartphone makes your child feel confident.

Appendix B. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.entcom.2020.100390.

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