

***Zoo Kids Zone in Chiang Mai Zoo: Best Practice Activities
under the Concept of Edutainment***

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Abstract

In the term of edutainment which is currently defined as the helper for social and health problems, this paper is intended to empirically apply the conceptual framework of edutainment to evaluate the behavior of young tourists who attended to the Zoo Kid Zone in Chiang Mai zoo, Thailand. Additionally, the empirical practice done in this paper is conducted directly to investigate the capability of the students who are above 15 years old to understand the edutainment concept by doing activities in the Zoo Kid zone for suggesting efficient plans to the policy makers. Methodologically, 355 young tourists are sampled to analyze by the descriptive and statistical approaches for clarifying the correlation between edutainment activities in the kid zone and tourists' perception and adoption. The results were obvious that the sampled people misunderstand the edutainment concept and they did not realize this issue in daily life. Consequently, these results will be the crucial work that empirically explains the recognition of edutainment travellers should be mentioned and implemented for improving the higher standard of the kid sector in Chiang Mai zoo. Furthermore, the pilot practical results in this paper will be the useful application for other zoos around Thailand that similarly have kid zone activities.

Keywords: Edutainment, Adoption, Kid activities, Choice analysis

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Introduction

What is Edutainment? Education and Entertainment can be combined as a new word called “Edutainment”. This regards the study of using input factors, processes, and output factors in each form of communications to apply in many educational situations. Why we should apply edutainment in educational institutions? Inevitably, educational activities need enjoyable things and entertainment activities needs educational learning. So, the concept of edutainment can provide knowledge, enjoy with environment, entertainment, relaxing, and learning by doing. Why is the Zoo Kids Zone in Chiang Mai Zoo? Chiang Mai zoo is the worldwide zoological place that is guaranteed by the World Association of Zoos and Aquariums (WAZA). The Zoo Kids zone is one of spotlighted sections located in the zoo. This place was established to provide kids for learning about animals, humans, technologies and ecological systems. As a result, edutainment would be suitably applied to improve services of this zone.

1. Objectives

1. To evaluate the activities in the Zoo Kids zone based on edutainment applications.
2. To study expectations and attitudes of audiences in the Zoo Kids zone.
3. To recommend a policy “Best Practice” for planning edutainment activities in the zoo Kids zone.

2. Review Literature

Zühal Okan (2003) studied the edutainment application to remedy children who addicted electronic games. Vasanth Kiran and team (2012) explored the edutainment application in how to use Hollywood movies in classrooms. Erin M. Steffes and Philippe Duverger (2012) applied edutainment ideas combining video clips to cure children who addicted them.

3. Research Methodologies

The methodology was implemented in this research are consist of the descriptive statistics and logit model. The observations were collected from the sample size equal to 355 by surveying in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017).

3.1 data description

Table 1. Display the data of Gender who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017).

Gender	Amount	Percentage
Men	140	39.4
Women	215	60.6
Total	355	100

Source: surveying

From table 1 was indicated that women have already visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017) more than man equal to over 60 %. From table 2, the people who were collected by surveying of this study have mostly the age of 15 to 19 is equal to 38%. From table 3, which it was presented that the data of the address for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). Most of them have address in Chiang Mai is equal to 53.2%. Table 4, which it display that the data of frequency of visiting for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). Most of them came to Zoo Kids zone of Chiang Mai zoo in during period of 1 year is equal to 1 times or about of equal to 56.6%. In table 5, which it present the data of types for traveling for who visited in Zoo Kids zone of Chiang Mai zoo found that most of them visited this place with their family is equal to more than 80%.

Table 2. Display the data of Age who visited in Zoo Kids zone of Chiang Mai zoo in during Period of 1 year (2016-2017).

Age	Amount	Percentage
15 - 19 ปี	135	38.0
20 - 24 ปี	44	12.4
25 - 29 ปี	39	11.0
30 - 34 ปี	62	17.5
35 - 39 ปี	44	12.4
40 - 44 ปี	17	4.8
45 - 49 ปี	4	1.1
50 - 54 ปี	4	1.1
55 - 59 ปี	2	0.6
More than 60	4	1.1
Total	355	100

Source: surveying

Table 3. Display the data of the address for who visited in Zoo Kids zone of Chiang Mai zoo in During period of 1 year (2016-2017)

Location	Amount	Percentage
In Chiang Mai	189	53.2
Other provinces	166	46.8
Total	355	100

Source: surveying

Table 4. Display the data of the frequency of visiting for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Frequency	Amount	Percentage
First time	201	56.6
Twice	55	15.5
More than twice	99	27.9
Total	355	100

Source: surveying

Table 5. Display the data of types for traveling for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Company	Amount	Percentage
Alone	8	2.3
With families	294	82.8
Tour groups	6	1.7
Schools/University	2	0.6
With friends	43	12.1
Others	2	0.6
Total	355	100

Source: surveying

From table 6, this table display about the data of education for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 2016 to 2017. Most of them are study in bachelor degree is equal to 41.7% and second order of the group has visiting in this place has of education level as the firs high-school is equal to a proximally 23% respectively.

Table 6. Display the data of education for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Education	Amount	Percentage
First high-school	81	22.8
Second high-school	53	14.9
vocational certificate	35	9.9
Bachelor degree	148	41.7
Others	38	10.7
Total	355	100

Table 7. Display the data of expenditure for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Expenditure (Baht)	Amount	Percentage
< 100	156	43.9
101 - 200	92	25.8
201 - 300	64	18.0
301 - 400	8	2.3
401 – 500	31	8.7
> 501	4	1.1
Total	355	100

Source: surveying

The last table, this table displayed the data of expenditure for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). In terms of data collection by surveying method was demonstrated that more than 40% of them expend less than 100 baht per time to visit the Zoo Kids zone of Chiang Mai zoo in during period of this study. In addition, the visitors have to expend higher from 300 to more than 500 baht per time is equal to a proximally 12%.

4.2 The empirical result of model estimation

Table 8. Display the result of model estimation for logit model based considers on the social And economic factors are influencing for revisiting of Zoo Kids zone of Chiang Mai zoo

```
. logit back gender age place frequence company education expenditure, robust
Iteration 0:  log pseudolikelihood = -142.48558
Iteration 1:  log pseudolikelihood = -135.80585
Iteration 2:  log pseudolikelihood = -135.46644
Iteration 3:  log pseudolikelihood = -135.46521
Iteration 4:  log pseudolikelihood = -135.46521

Logistic regression                Number of obs   =       355
                                   Wald chi2(7)    =       15.41
                                   Prob > chi2     =       0.0311
Log pseudolikelihood = -135.46521 Pseudo R2      =       0.0493
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back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
gender	.8062772	.3294185	2.45	0.014	.1606288	1.451926
age	.0500574	.0242832	2.06	0.039	.0024631	.0976516
place	.2065725	.3194333	0.65	0.518	-.4195053	.8326503
frequence	-.2426542	.1709402	-1.42	0.156	-.5776907	.0923824
company	.042845	.1686434	0.25	0.799	-.2876901	.3733801
education	-.2251114	.1335971	-1.69	0.092	-.4869569	.0367342
expenditure	.0005985	.0009984	0.60	0.549	-.0013582	.0025552
_cons	-.0725908	1.269495	-0.06	0.954	-2.560754	2.415573

From: authors

From table 8, the logit model estimation was indicated that only the social factor was influencing for who revisited the Zoo Kids zone of Chiang Mai zoo in during period of study. In other factor is not influenced for who revisited the Zoo Kids zone of Chiang Mai zoo in during the same period of study. In addition, the social factor influenced of who revisited the Zoo Kids zone is consist of gender, age, and education respectively. In term of logit model explanation for this visiting behavior give more detail that the gender and age have a positively relationship with the probability of who will revisit the Zoo Kids zone of Chiang Mai zoo. In contrast, the education of the people visited the Zoo Kids zone of Chiang Mai zoo has impact of a reducing the probability of who revisited the Zoo Kids zone of Chiang Mai zoo. It implied that whenever the people have more higher education then they will reduce of revisit in the Zoo Kids zone of Chiang Mai zoo as less as they can.

Table 9. Display the result of model estimation for logit model based consider on the Expectation before entrance

Logistic regression		Number of obs	=	355	
Log pseudo-likelihood = -104.51653		wald chi2(34)	=	75.82	
		Prob > chi2	=	0.0001	
		Pseudo R2	=	0.2665	
back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
e_hall	-.1736386	.4790224	-0.36	0.717	-1.112505 .765228
e_intro	.8851162	.604908	1.46	0.143	-.3004817 2.070714
e_greenzoo	-.2011943	.5361388	-0.38	0.707	-1.252007 .8496185
e_manriver	.580173	.6888112	0.84	0.400	-.7698721 1.930218
e_model	-.2758029	.4512227	-0.61	0.541	-1.160183 .6085772
e_hunting	-.4481027	.5139066	-0.87	0.383	-1.455341 .5591358
e_anatomy	.2316092	.4795251	0.48	0.629	-.7082428 1.171461
e_consume	-1.145404	.5929691	-1.93	0.053	-2.307602 .0167943
e_forrest	-.1204449	.6350979	-0.19	0.850	-1.365214 1.124324
e_reenergy	.7120252	.8612946	0.83	0.408	-.9760813 2.400132
e_games	-.4932807	.4649285	-1.06	0.289	-1.404524 .4179624
e_elephant	-1.101026	.4857365	-2.27	0.023	-2.053052 -.1489995
e_royal_pro	-.2800446	.6151852	-0.46	0.649	-1.485785 .9256963
e_cinema	-.5888855	.6974402	-0.84	0.398	-1.955843 .7780722
e_library	1.530324	.6848065	2.23	0.025	.1881278 2.87252
e_know1	1.000163	.5770582	1.73	0.083	-.1308501 2.131176
e_know2	-1.539266	.8047483	-1.91	0.056	-3.116544 .0380112
e_know3	-.3037231	.6860253	-0.44	0.658	-1.648308 1.040862
e_know4	-.6605013	.6645343	-0.99	0.320	-1.962965 .6419619
e_know5	1.55761	.7536971	2.07	0.039	.0803912 3.034829
e_know6	-2.041278	.6451253	-3.16	0.002	-3.305701 -.776856
e_know7	2.637487	.7460321	3.54	0.000	1.175291 4.099683
e_know8	-.3071129	.760596	-0.40	0.686	-1.797854 1.183628
e_know9	-.6283532	.557761	-1.13	0.260	-1.721545 .4648382
e_fun1	1.152594	.6868282	1.68	0.093	-.1935647 2.498752
e_fun2	-2.443739	1.001005	-2.44	0.015	-4.405672 -.4818057
e_fun3	-.1913878	.7936731	-0.24	0.809	-1.746958 1.364183
e_tech1	-.1156229	.670986	-0.17	0.863	-1.430731 1.199485
e_tech2	-.0264962	.9018746	-0.03	0.977	-1.794138 1.741145
e_tech3	1.800919	.7887904	2.28	0.022	.2549187 3.34692
e_act1	1.153986	.4917386	2.35	0.019	.1901959 2.117776
e_act2	-1.64908	.9338564	-1.77	0.077	-3.479405 .181245
e_act3	1.189736	.7858759	1.51	0.130	-.3505528 2.730024
e_act4	.1870342	.6540905	0.29	0.775	-1.09496 1.469028
_cons	.1197801	.9344343	0.13	0.898	-1.711678 1.951238

From: authors

From table 9, the results of logit model estimation was indicated that the 13 factors were influencing on the expectation for probability of whom still never to revisit the Zoo Kids zone of Chiang Mai zoo in during period of study. In those factors consists of two group are influencing on both the positive direction and negative direction to the expectation of the probability of them before they revisit the Zoo Kids zone of Chiang Mai zoo in during the same period of study. First, the positive direction factors are affected to their expectation of probability of before to revisit again the Zoo Kids zone of Chiang Mai zoo is to consist of 7 factors such as library room of animal (e_library), the exhibition of Chiang Mai zoo history (e_know_1), the exhibition of hunting equipment (e_know_5), the exhibition of forest in Thailand(e_know_7), animal game zone(e_fun_1), the exhibition of technology for Zoo Kids zone (e_tech_3), and the last positive factor is the activity influence to self-exiting away(e_act_1). In contrast, the negative direction factors are affected to their expectation of probability of before to revisit again the Zoo Kids zone of Chiang Mai zoo is to consist of 6 factors such as exhibition of displaying for wrong thinking for consume the animals (e_consume), the 3D exhibition of elephant (e_elephant), the

exhibition of introduction for Chiang Mai zoo (e_know_2), the exhibition of anatomy of animals (e_know_6), the exhibition of 3D drawing (e_fun_2), and the last negative factor is the exhibition of activity to stimulate the creative thinking(e_act_2). In conclusion, the empirical results of estimation from logit model suggested that the overall of those factors confirmed that visitors to visit the Zoo Kids zone is satisfied with the process of entertaining people at the same time as teaching them the knowledge together. From table 10, this table display about the result of model estimation for logit model based consider on attitude after entrance. The factors have influence on the probability to revisit of whom have ever been in Zoo Kids zone of Chiang Mai Zoo is still decreased when compare the result of estimation from previous logit model. In this case, only 8 factors are affected the probability of whom to revisit the Zoo Kids zone again. In the positive direction factors to impact the probability of whom to revisit this place consist of 5 factors such as the exhibition of green zone (a_know_3), the exhibition of forest in Thailand (a_know_7), the exhibition of VDO story of wrong thinking to consume of animals (a_tech_2), the exhibition of technology for Zoo Kids zone (e_teach_3), and the last positive factor is the exhibition of activity to stimulate the creative thinking (e_act_2).

Table 10. Display the result of model estimation for logit model based consider on attitude after Entrance

Logistic regression		Number of obs = 354				
Log pseudolikelihood = -98.380331		wald chi2(19) = 82.09	Prob > chi2 = 0.0000			
		Pseudo R2 = 0.3088				
back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
a_know1	.0232708	.4995383	0.05	0.963	-.9558062	1.002348
a_know2	-.8551793	.4038813	-2.12	0.034	-1.646772	-.0635865
a_know3	1.359522	.3678731	3.70	0.000	.6385038	2.08054
a_know4	.4261774	.3844959	1.11	0.268	-.3274208	1.179776
a_know5	.4916825	.3655833	1.34	0.179	-.2248476	1.208213
a_know6	-.3297007	.3999117	-0.82	0.410	-1.113513	.4541117
a_know7	1.004898	.5229255	1.92	0.055	-.0200169	2.029814
a_know8	-.3913003	.3835331	-1.02	0.308	-1.143011	.3604108
a_know9	-.201766	.4702936	-0.43	0.668	-1.123525	.7199925
a_fun1	-.5975225	.3962179	-1.51	0.132	-1.374095	.1790503
a_fun2	-.8431556	.5081954	-1.66	0.097	-1.8392	.1528891
a_fun3	.1238777	.4290325	0.29	0.773	-.7170106	.964766
a_tech1	-.6552788	.5029457	-1.30	0.193	-1.641034	.3304767
a_tech2	.7213414	.3770774	1.91	0.056	-.0177167	1.4604
a_tech3	.9925319	.5934819	1.67	0.094	-.1706712	2.155735
a_act1	-.5777367	.5680043	-1.02	0.309	-1.691005	.5355314
a_act2	1.192524	.4898135	2.43	0.015	.2325068	2.15254
a_act3	.5747984	.4389425	1.31	0.190	-.2855131	1.43511
a_act4	-.4406152	.4094886	-1.08	0.282	-1.243198	.3619677
_cons	-4.95416	1.44915	-3.42	0.001	-7.794442	-2.113879

From: authors

For the negative factors to effect of the probability to revisits of who have ever already been Zoo Kids zone of Chiang Mai Zoo. The first factor is the exhibition of introduction for Chiang Mai zoo (e_know_2) and the second factor is the exhibition of 3D drawing (e_fun_2). And the last factor has a negative impact on the probability to revisit in Zoo Kids zone of Chiang Mai Zoo is other factors are not included in the

logit model. However, some factors in the logit model estimation are found that they would be displayed in the same direction in both before coming and after coming to visit the Zoo Kids zone in Chiang Mai Zoo. If those of factors have positive influence on the probability to revisit in the Zoo Kids zone of Chiang Mai Zoo then both government sector and private sector must be stimulated these activities more than previously for improving of the Zoo Kids zone of Chiang Mai Zoo. Which it will be as a suitable process of based on learning by the best practice activities under the concept of edutainment for this place.

5. Conclusion

The binary statistic model confirmed that the factors of social and economics, activities, and audiences' knowledge backgrounds significantly relate to their re-visiting decision. It is obvious that sampled people needed to be basically improved regarding the concept of edutainment since the results stated people raised high expectations, but they have gained a few of good experiences after attending. The edutainment concept really needs the rotations of creative activities, and public and publication supports to encourage audiences to recommend to others.

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