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MOTIVATION AND MEDIUM OF INFORMATION AFFECTING BEHAVIOURAL PATTERNS OF FILM VIEWERS IN MALAYSIA

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ABSTRACT

This paper is aimed to identify the key factors on behavioural patterns that affect audiences in making decision to watch films by using the techniques in multiple regressions (MR). The success of a country's film industry is determined by the collaboration between film producers and audiences. Audiences are a major contributor that will determine the success of a film, while producers is the main supplier to provide films to the audiences. Mathematical modelling concept is used in the methodology where two categorical variables, selected after factor analysis, are transformed into dummies. The search for significant factors would involve data cleaning, factor analysis, dummy transformation and four-phase model building. The model-building phases will incorporate the procedures of selecting the best model involving multicollinearity test using the variance-based approach (VIF) below 5. Results revealed that the best model obtained consists of factors on interest, family, friends, the internet and printed medium of posters and brochures which are influential in attracting audiences. This study has therefore extended our knowledge to build bridges between two different fields, that is scientific and non scientific through the concept and methodology of modelling, and consequently, help in advertising and marketing of the film industry by influencing the perceptions of audiences towards cinemas.

Keywords: Mathematical modelling, Behavioural patterns, Multiple regressions (MR), Model-building, Significant factors, Multicollinearity, Variance-based approach (VIF), Film industry.

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Contribution/ Originality

This study uses new estimation methodology in Social Sciences where significant factors in real-world problems are identified; in this paper, behavioral patterns of film viewers in Malaysia. The mathematical modelling approach with multicollinearity removals and elimination of

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insignificant factors, besides other statistical procedures and tests are incorporated for model's robustness.

1. INTRODUCTION

Film industry is one of the major contributors to the national income and according to Herwina and Zarith Delaila (2012) research interests in the film industry have flourished in recent years as it has emerged as a new dynamic industry in world trade. While Hasrul *et al.* (2014) had stated that the local film industry should be forward-thinking beyond the safe zone instead of only focusing the industry's rapid development as source of income.

The local film industry dumped the entry of foreign films that flooded the local market not only through cinema but also through the new media as well. Hence, the film producers do not plan strategies using conventional methods to simply attract the audiences and international markets' attention, but also plan strategies to create a film that can reach to audiencess of all ages. Thus, the audiences were more eager to buy the movie tickets.

Then there exists a win-win situation for producers and film viewers. Currently, the producers are trying to identify the reasons of low ticket sales at the movie theatres. According to Mariah and Nur Hanini (2014) the audience may change their taste or become more critical in not wanting to spend time watching a movie that has not been able to meet their interests. Moreover, local films are easily influenced by neighbouring country film ethics and trends. Hence this study attempts to discover the significant factors that affect the audience's interest to go to a cinema.

Globalization has led to an increase in film industries for each country would consider a few aspects, like involvement in film-making, film consumption, film production and organization of film-making. It specifies the current economic situation in the film industry, where with increased production and marketing costs often sets the standard for the films' big studios are willing to invest in. Nowadays, we can see that any types of theaters are seldom opened to audiences for view. Many remakes and sequels in recent years have been released, why this happens and how to understand the motivating factors which led to this matter were contributed by many reasons. According to Herwina and Zarith Delaila (2012) many countries had gained contribution to economic development from successfully developed their film industry.

While Mark (2008) stated that films had demand uncertainty when the market size increased, and it was difficult to see any film's achievement at the box office due to unpredictable tastes from consumers. So, films need transformations into branded products to attract the attention from audiences and to make sure film revenues reached above cinema fixed costs. Thus, audiences and film producers will faces win–win situations, and the film industry will take advantage to become a contributor to economic growth. Hence, this study tries to overcome the problem of low ticket sales at the cinema by looking up the significant factors that lead audiences to go and enjoy the film viewing in cinemas.

2. LITERATURE REVIEW

Kaisa *et al.* (2003) repeated that going to cinema is becoming a kind of leisure culture. They reported the fundamental aspects of cinema-going in Europe by conducting cross-cultural research on the activity. They discovered an unexpected finding in their research in which that cinema–going was considered part of a culture. The results from comparisons found that many more similarities than differences in cinema-going among Finnish, Estonian and Portuguese. This thus concluded that among European moviegoers, the cinema-going is still the most popular free time activity. For all the changes they experienced, people still become more interested to go to cinemas.

Mustafa Mahmoud (2009) had studied the Egyptian movie-viewing audiences to see what motivated them to go to see a particular movie in a film theatre. This study focused only on how an Egyptian is attracted to movies, such as word of mouth, the cast and director of a movie, many media assets including movie previews and movie critics in newspapers or on TV. Seven factors that were analyzed for this study would include movie cast, directors of the movies, trailers, general advertising, word of mouth, reviews and movie genre. The results found out that both the movie genre and casts were the most important factors in determining the choices of Egyptian audiences.

According to a 2009 report produced by Oxygen (2009): "… Retail sales of pre-recorded DVDs have fallen, but is this due to heavy discounting, cheaper products having flooded the market since the demise of Entertainment UK or the rise of grocery multiples in the sector, who use DVDs as a loss leading product. Several sub-sectors of the rental market are rising in popularity, centred around value for money and convenience" which raise the question "what does this mean for the traditional high-street market". The cinema continues to be popular, due to appealing product and innovation, particularly 3D, but the wave of new, cheaper technology, but could be due to "the fact that people are cutting back on discretionary spend leads to a significant backlash for cinema in the future. The growths in digital subscriptions have enabled movie channels to be the most popular delivery method for movies amongst consumers". "Data show that movies play a central role in the lives of kids and teenagers, who are quick to embrace this new technology".

Vasan (2005) described how her "… report has added to the growing body of evidence particularly in India of the importance of films and TV in young people's lives. It has also highlighted that films and TV along with peers make a powerful combination particularly among young men. Apart from indicating media consumption patterns, the study also indicates the possible pathways in which ideas from films are translated or not translated into action. As a next step, it would be important to unpack specific factors associated with media influence among young men and women. A better understanding of these gendered influences will provide important pointers for interventions to use media and peers in creative ways to ensure a healthy and responsible transition into adulthood among young men and women."

According to a report by the UK Film Council (2007) "… film is also regarded as a doorway to other cultural spheres". Most of the participants stated that watching a film based on book, instead of the book itself, helped them pass their English literature exam compared to reading books, watching movies are much quicker and cause less burden. Furthermore, the movies can also indirectly promote to encourage the audiences to read the book in which the film was based from. Watching movies is a more convenient way to see other places and cultures since travelling is not always possible. It was also found out that most of audiences are inspired by the movies to visit the location of the movie and to read books related to the movie. Film and music here on robust relationship and this subject draws a lot of attentions. Through movies, audiences are exposed to various types of music and artists whom they would not normally come across. Since politics has becoming less attractive in one's daily life, movies can be used to discuss political issues in a more compelling and thought-provoking way. The report further commented that "… I have no view about life in Brazil until the movie City of God brought all sorts of issues for days and lead to discuss with friends." It was also further reported that there is a natural fit between film and visual art in aspects of aesthetics, creativity and also artistic intent. According to a study conducted by the Dyna Herlina (2012) her research had examined to understand film consumer decision-making using the mix method approach. There were several factors that influenced the audiences to watch movies like the storyline of the film where audiences could obtain information of the story through the movie synopsis, recommendations, reviews and trailers. Besides that, screening schedule played the important roles to attract audiences because most of them preferred to watch movies on a weekend or holiday nights. Furthermore, consumers would consider little information before selecting a movie, like marketing communication, neutral information source, the film characteristics, content, and ease. Hence, the film producers are in need of taking into account all these methods to attract more audiences go to the cinemas, and also by some substantial investments which are essential to support film industry. Mahmoud and Elham (2012) also studied the impact of marketing mix model (4P's) on attracting audiences to the cinema from the perspective of movie goers in Tehran. Factors involved were marketing communication (advertising, publicity), neutral information source (film review, word of mouth), film characteristics (genre, director, remake production, country of origin, actor, adaptation works, production house, and title), content (story, objectionable content, technology), and ease (screening schedule, title). They found that to reduce the risks in the film industry, expansion of expertise was needed on factors affecting movie sales and attracting people to cinema. As a conclusion, they found that all marketing mix variables were influential in attracting audiences, excluding the price. Place, film genre and director in product variable, and promotion, such as word of mouth and movie review had the highest priority.

Herwina and Zarith Delaila (2012) had done the study to identify the challenges faced by the Malaysian film industry under the conditions of increased global competition in the film business by using a qualitative research approach. They reported challenges from three main aspects,

including the ability to compete with foreign countries such as beautiful shooting locations, the ability to develop the animation sector, and the potential to create movies with international standards. One of the major challenges facing the Malaysian film industry is the small domestic market. It was roughly calculated that the total audience for feature movies was approximately 5.29 million in 2008, out of a total population of approximately 28 million. The film industry in Malaysia is a small industry in terms of the quantity of films produced annually as well as its contribution to the economy. Thus, the government plays an essential role in nurturing and promoting the development of the film industry, combating those challenges through the policy and regulatory framework. The government should take firm action through FINAS to promote the film industry's development. In spite of that, more measurements need to be considered to ensure that the government's funds are channeled and used properly and efficiently.

According to Kaye (2014) " … Google/MBD's data shows that 70% of moviegoers don't actually choose the movie they'll see until they're at the theater". The movie of their choice depends on a few factors. It was found out that comedy choosers were attracted by the cast, action choosers would look for the directors while horrors movie fans would care more for convenient show times then daily hacking and slashing. However, not all audiences will go to cinema theatres without knowing what movies are being shown. Four out of five audiences would use YouTube to get to know about movies with most of them being influenced by the trailer, three times more that those influenced by peers' opinions, and surprisingly (where most of the trailers are hosted) and what the viewers watched is also statistically related. With the great number of film being produced from DC and Marvel Comics these days, it is logic that people looking of these favorite trailers also search for related comic content. But action lovers are more likely to search for comedy content than comedy loves, then who in turn look would for video game materials more than action lovers. Kaye (2014) further commented that " And who's more interested in soundtracks? They are the same people looking at family-friendly film options." Films has also able to pull interested tourists coming to a country, and according to Pham *et al.* (2015) film premiered in Vietnam is capable in encouraging people to travel to Korea. This study is more specific in investigating the impacts of the specific factors of the Korean films, and two intermediate variables of attentions changes on Korean country's figure and regularity of watching Korean films on planning to visit Korea in the background of Vietnam. The results suggested that factors of film topics and contents; actors, music and backgrounds; culture and tradition have significantly affected the frequency of watching and perception change on a country's image, which implied that Korean films have globally differentiated itself with other nations' films industry by concentrating into the exclusive aspects of its social and cultural values.

3. METHODOLOGY

Samples in this research had included Malaysian residents in cities of selected states, such as Selangor (Kuala Lumpur), Johor (Johor Bharu), Pahang (Kuantan), Kedah (Alor Setar), Sabah

(Kota Kinabalu) and Sarawak (Kuching). In the early stage, 1337 survey questionnaires were collected in these six states. However, there were only 1265 usable surveys for data analysis that consisted of 612 males and 653 females. Besides, the survey questionnaire consisted of 19 questions, and each of items in part two was assessed on Likert's five score scale (the scores ranging from low to very high).

Part 1 of the questionnaires were about the background of the respondents such as age, gender, ethnicity, religion, education, occupation, income, number of times per month to watch film, and part 2 were 11 items of respondents' perceptions for preferring watching films, consisted of motivation, resources, selection of the film productions, gratuities, genre's trends, genre's themes, viewership's of attraction, medium-watching, opinions regarding the Malaysia Malay's films, the suitable show times and public opinions.

3.1. Data Preparations

Processes that were involved in data preparations of the methodology had several stages as shown in Figure 1 below:

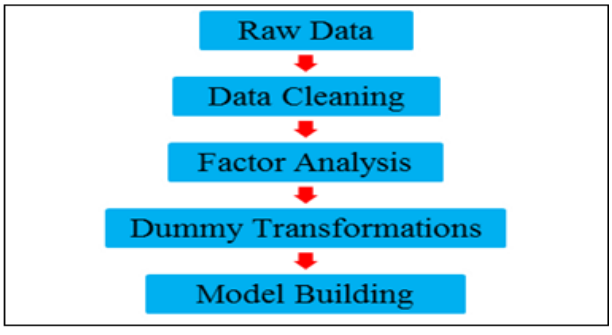

Figure-1. Procedures in Data Preparations

Once, the data entry process was completed, the data cleaning process was run by recognizing certain types of data that must be cleaned, such as data that resided on the same line or purposes, data that were not in line with the questions in the questionnaire and data that were incomplete, were all discarded. The purpose was to avoid any interruption to the analysis because of the presence of non contributing data. Data cleaning started by doing the missing value analysis in SPSS for all the variables involved. Any variables in columns that had 20 percent and above of missing values were removed, and then proceeded to data in rows by looking to any questions that respondents did not answer, so therefore removed the respective respondent.

Next stage was factor analysis. Hair *et al.* (2006) stated that the method of factor analysis was to seek a solution to the summary of the information or data that consisted of several origin variables. These parameters should be reduced to a smaller set of combinations between the variables which then cause minimum loss of information. The analysis factors was formed on the

subset of the eleven selected variables (the motivation, information resources, the movie production alternative, gratuities, the trends genre, tendencies theme, intriguing viewing, medium-watching, opinions about the Malaysian Malay's films, the suitable show times and general view) that represented all perceptions on film viewership. By employing the principle component analysis for the extraction method with varimax and Kaiser Normalization rotation approach, there were two factors that were extracted with eigenvalues cutoff at 1, that were, the factors of inducement/motivation and resources in medium of information. These two components indicated that the dependent variable and independent variable were highly correlated to each other.

For the multiple regression analysis, only these two components of parameters would be used. The processes of transformation into dummies for all variables in these two components were then carried out. Respondents who gave answers of Likert scale four and five would be transformed into one, while other answers would become 0. Variables in the form of dummy variables were as shown in the Table 1 below.

Table-1. Description of Variables Involved in Modelling.

Variable	Description	Type
Y	Viewers Attraction Score	Quantitative
D1	Motivation of interest	Dummy
D2	Motivation of family	Dummy
D3	Motivation of friends	Dummy
D4	Motivation Boredom of no activities	Dummy
D5	Motivation of box office films	Dummy
S1	Medium - Internet	Dummy
S2	Medium - Television/Radio	Dummy
S3	Medium - Poster/Brochure	Dummy
S4	Medium - Newspaper/Magazine	Dummy
S5	Medium - Story from friends/family	Dummy

3.2. Multiple Regression (MR) Models

Gujarati (1999) stated that regression analysis is a type of statistical technique use to study the relationship between one dependent variable to one or more independent variables. The objective of regression analysis is to predict a single dependent variable (DV) from the knowledge of the one or more independent variables (Aminatul Hawa *et al.*, 2012). Combination of affected variables on the criterion or dependent measure can be represented in the form of interactions. When an interaction effect is identified, the variables' levels to impact become dependent towards the other variables. One of the advantages of MR is the ability to estimate and test the interactions effect when the predictor variables are either categorical or continuous. Zainodin *et al.* (2011) also mentioned the Multiple regression general form as follows:

$$Y = \Omega_0 + \Omega_1 W_1 + \Omega_2 W_2 + \cdots + \Omega_k W_k + u$$

where Y is the dependent variable, Ω_0 is constant term, Ω_j is the j-th coefficient of independent variable W_j and W_j is the j-th independent variable (such as single independent variables, interaction variables, generated variables, dummy variables and transformed variables) where j = 1,2, . . . , k and u is the random error of the model.

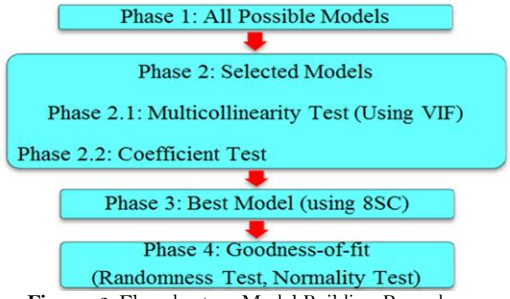

Figure-2. Flowchart on Model Building Procedures

The flowchart on the model building procedures are as shown in Figure 2, comprises of four phases, namely, Phase 1 of all possible models, Phase 2 of the selected models after the multicollinearity and coefficient tests being carried out, Phase 3 of the best model selected based on the eight selection criteria and Phase 4 of the goodness-of-fit test using the randomness and normality tests.

The best model is obtained using the eight selection criteria (8SC) as shown in Table 2 with AIC (Akaike, 1974); FPE (Akaike, 1969); GCV (Golub *et al.*, 1979); HQ (Hannan and Quinn, 1979); (Rice, 1984); (Schwarz, 1978) SGMASQ (Ramanathan, 2002) and SHIBATA (Shibata, 1981).

Table-2. Best Model Selection Criteria

EIGHT SELECTION CRITERIA (8SC) K= number of estimated parameters, n=sample size, SSE=sum of square errors			
AIC:	$\left(\frac{SSE}{n}\right)(e)^{(2K/n)}$	RICE:	$\left(\frac{SSE}{n}\right)\left[1-\left(\frac{2K}{n}\right)\right]^{-1}$
FPE:	$\left(\frac{SSE}{n}\right)\frac{n+K}{n-K}$	SCHWARZ:	$\left(\frac{SSE}{n}\right)n^{K/n}$
GCV:	$\left(\frac{SSE}{n}\right)\left[1-\left(\frac{K}{n}\right)\right]^{-2}$	SGMASQ:	$\left(\frac{SSE}{n}\right)\left[1-\left(\frac{K}{n}\right)\right]^{-1}$
HQ:	$\left(\frac{SSE}{n}\right)(\ln n)^{2K/n}$	SHIBATA:	$\left(\frac{SSE}{n}\right)\frac{n+2K}{n}$

4. RESULTS AND DISCUSSIONS

Results from factor analysis for rotated component matrix showed that encouragement and motivation as well medium information in Component 2 had positive relationships and high correlations with the dependent variable, Viewers Attraction. Table 3 showed the results of the rotated component matrix. Both independent variables were thus chosen to be included in the multiple regression models.

Table-3. Rotated Component Matrix.

Components	1	2
Viewership's of Attraction	6.9402E-01	
Genre's Trends	6.8422E-01	
Genre's Themes	6.7332E-01	
Public Opinions	6.6379E-01	
Gratuities	6.2718E-01	
Opinions Regarding The Malaysian Malay's Film	5.9403E-01	
Suitable Show Times	5.0221E-01	
Medium-Watching	4.2138E-01	4.1591E-01
Viewers Attraction (DV)		7.2866E-01
Encouragement & Motivation		7.1103E-01
Medium of Information		6.2757E-01
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		

Phase one of the model-building procedures in Figure 2 is listing down all the possible models. According to Zainodin and Khuneswari (2009) the number of all possible models can be calculated using the formula as follows:

$$N = \sum_{j=1}^{q} j({}^{q}C_{j})$$

where 'N' is number of possible numbers and 'q' is single independent variable excluding dummy variable. So in this study, the number of possible models involved is 4. All models will then go through Phase two for multicollinearity test using variance based (VIF) below 5. According to Zainodin *et al.* (2015) Variance Inflation Factor (VIF) quantifies the severity of multicollinearity in an ordinary least squares regression analysis where it provides an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. So, any variable that has VIF value more than 5 would be removed one by one, and the model is rerun subsequently until it is free from multicollinearity. After the multicollinearity test, the coefficient test will take place by the process of elimination as shown in Table 4.

Table-4. Process of Elimination of Each Run of Coefficient Test For Model M3.0

M3.0.0	Unstandardized Coefficients		t	P-value	Comment: The REMOVAL is step by step (it is at ONCE)
S5	B	Std. Error	0.419	6.7500E-01	Not significant (largest p-value > 0.05)
	0.102	0.243			

Action: Eliminate value S5 then rerun the model with remaining variable

M3.0.1	Unstandardized Coefficients		t	P-value	Comment: The REMOVAL is step by step (it is at ONCE)
S4	B	Std. Error	0.582	5.6050E-01	Not significant (largest p-value > 0.05)
	.129	0.222			

Action: Eliminate value S4 then rerun the model with remaining variable

M3.0.2	Unstandardized Coefficients		t	P-value	Comment: The REMOVAL is step by step (it is at ONCE)
D4	B	Std. Error	0.669	5.0347E-01	Not significant (largest p-value > 0.05)
	0.157	0.235			

Action: Eliminate value D4 then rerun the model with remaining variable

M3.0.3	Unstandardized Coefficients		t	P-value	Comment: The REMOVAL is step by step (it is at ONCE)
S2	B	Std. Error	-0.850	3.9562E-01	Not significant (largest p-value > 0.05)
	-0.189	0.223			

Action: Eliminate value S2 then rerun the model with remaining variable

M3.0.1	Unstandardized Coefficients		t	P-value	Comment: The REMOVAL is step by step (it is at ONCE)
D5	B	Std. Error	1.381	1.6755E-01	Not significant (largest p-value > 0.05)
	0.357	0.258			

Action: Eliminate value D5 then rerun the model with remaining variable

The insignificant variable was omitted one by one because the p-value was more than 0.05. This process was carried out until the significant variables: D_1 (interest), D_2 (family's influence), D_3 (friends influence), S_1 (internet) and S_3 (Poster/Brochure) were obtained as shown in Table 5 where they all had significant p-values below 0.05.

Table-5. The Coefficients for Best Model M3.0.5

Model 3.0.5	Unstandardized Coefficients		t	P-value	Comment
	B	Standard Error			
(Constant)	2.920	0.231	12.634	1.5570E-34	
D1	1.801	0.234	7.690	2.9426E-14	Significant
D2	0.943	0.218	4.335	1.5739E-05	Significant
D3	0.808	0.224	3.601	3.2879E-04	Significant
S1	-0.449	0.215	-2.086	3.7155E-02	Significant
S3	0.764	0.214	3.566	3.7576E-04	Significant

The next stage would be the selection of the best model using the eight selection criteria (8SC) as shown in Table 6. Best model for this study was found to be model M3.0.5: $\hat{y} = \hat{\Omega}_0 + \hat{\Omega}_1 D_1 + \hat{\Omega}_2 D_2 + \hat{\Omega}_3 D_3 + \hat{\Omega}_6 S_1 + \hat{\Omega}_8 S_3$ where D_1 (interest), D_2 (family's influence), D_3 (friends influence), S_1 (internet) and S_3 (Poster/Brochure) with the number of parameters involved was 6. The technique for number of parameters counting can be found in Zainodin *et al.* (2014).

Table-6. Best Model Selection

8SC (Eight Selection Criteria)													
NP	Selected Model	R2	(K+1)	SSC	n	AIC	FPE	GCV	HQ	RICE	SCHWARZ	SGMASQ	SHIBATA
4	M1.0.2	9.0900E-02	4	17257.314	1265	13.7287	13.7287	13.7288	13.8128	13.7290	13.9538	13.6854	13.7284
3	M2.0.3	2.9318E-02	3	18426.336	1265	14.6355	14.6355	14.6356	14.7027	14.6357	14.8151	14.6009	14.6354
6	M3.0.5	1.0256E-01	6	17036.068	1265	13.5956	13.5956	13.5959	13.7208	13.5962	13.9313	13.5314	13.5950
10	M4.11.15	1.0320E-01	10	17023.912	1265	13.6721	13.6721	13.6730	13.8825	13.6738	14.2394	13.5649	13.6704

Lastly, the model's goodness of fit was tested using the randomness and normality tests. Figure 3 showed that the randomness plot was within ± 3 standard deviations which implied that the standardized residuals were random. Table 7 showed the normality test on the standardized residuals of the best model M3.0.5 obtained in this research. Since its p-value was less than 0.05, hence the standardized residuals were normal with a Kolmogorov-Smirnov statistics of 0.172.

Figure 4 further showed the normality plot of the standardized residuals as a supporting evidence.

Table-7. Normality Test of Standardized Residuals Model M3.0.5

NORMALITY TEST	Kolmogorov-Smirnov		
	Statistic	df	P-value
Standardized Residuals M3.0.5	0.172	1265	<0.0001

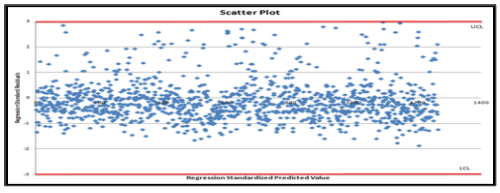

Figure-3. Randomness Plot

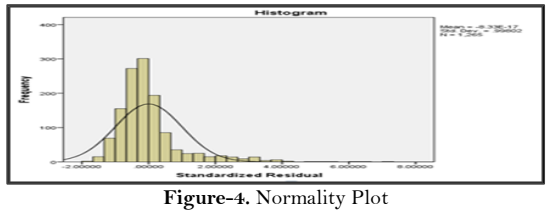

Figure-4. Normality Plot

These modelling procedures implicated that the model obtained is robust. The model can hence be used for further analysis on its implications to the government policies, economic projections, effective and efficient management practices, and marketing strategies involved in the film industry.

5. CONCLUSIONS

Recent developments in content delivery technology such as via satellite TV, digital storage (CDs, DVDs or hard disks) and the Internet have complimented and may have superceded film-viewing habits in the cinema. Nevertheless, films of various genres continue to attract audience. Certainly it is plausible to heed Kaye (2014) observation that movie fans choice of film "… depends on a number of factors. The individual who pick comedies are attracted by the cast, activity fans look at the director, and horror lovers appear to think more about convenient and helpful showtimes than who's doing the hacking and slashing." "… 4 out of 5 audiences will utilize the YouTube to find out around a film, with 39% most part affected by trailers, three times more than those impacted by the cast or a peer's opinion."

This study conclusively showed that the factors affecting audiences watching films in cinemas is to increase the frequency of viewership. The best model showed that the frequency of audiences to cinemas in a month (dependent variable) would rely on the independent variables. So ultimately, the number of audiences to cinemas can be increased by focusing on the contributing factors more than others. One of the most important factors is interest where 86.48% of the respondents chose this factor as a major catalyst that influences them to watch movies in cinemas, while 13.52% had chosen other factors as the secondary factor that encourages them. Additionally, 80.32% of the respondents chose encouragement from friends as the second factor that prompted them to go to cinemas, while 60% of the respondents chose encouragement from family as the third. This implied that the Malaysian movie industry should focus on these factors

or medium in order to attract audiences to watch films. Besides that, producers should produce more films with concepts on family, love and human relationships and study the trends and latest interest of audiences before producing more films. Other factors that influence audiences is medium (i.e. internet and posters/brochures). Producers usually used this medium to promote films based on a lot of the information content, such as titles, directors, producers, music player, home production, genre, behind the scenes, history summaries, cinematography, actors and others which are used by audiences as a referral guide to watch the films.

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REFERENCES

Akaike, H., 1969. Fitting autoregressive models for prediction. Annals of Institute of Statistical Mathematics, 21(1): 243-247.

Akaike, H., 1974. A new look at the statistical model identification. IEEE Transactions on Automatic Control, 19(6): 716-723.

Aminatul Hawa, Y., A. Noraini and H.J. Zainodin, 2012. Multiple regression models up to first-order interaction on hydrochemistry properties. Asian Journal of Mathematics and Statistics, 5(4): 121-131.

Dyna Herlina, S., 2012. Identifying key factors affecting consumer decision making behavior in cinema context: A qualitative approach. International Conference on Business, Economics, Management and Behavioral Sciences (ICBEMBS'2012). pp: 547-551.

Golub, G.H., M. Heath and G. Wahba, 1979. Generalized cross-validation as a method for choosing a good ridge parameter. Technometrics, 21(2): 215-223.

Gujarati, D.N., 1999. Essentials of econometrics. 2nd Edn., New York: McGraw-Hill.

Hair, J.F., R.E. Anderson, R.L. Tatham and W.C. Black, 2006. Multivariate data analysis with reading. 6th Edn., New Jersey: Prentice Hall Inc.

Hannan, E.J. and B.G. Quinn, 1979. The determination of the order of an autoregression. Journal of the Royal Statistical Society, 41(B): 190-195.

Hasrul, H., A. Jamaluddin and I. Faridah, 2014. Filem dan revolusi teknologi: Persepsi penggunaan CGI Dari Aspek Estetik & Kreativiti. Jurnal Komunikasi, Malaysian Journal of Communication, 30(Special Issue): 95-106.

Herwina, R. and A.A. Zarith Delaila, 2012. Film business in Malaysia: Challenges and opportunities. International Journal of Humanities and Social Science, 2(12): 198-202.

Kaisa, L., J. Jelena and R. Acacio, 2003. Semiotics of cultures: The notion of cinema-going. Available from http://www.semionet.fr/ressources_enligne/Enseignement/03_04/03_04_Bayreuth/Projets/cinemagoing.pdf [Accessed 27/03/2015].

Kaye, B., 2014. New study reveals America's movie viewing habits. Available from http://consequenceofsound.net/2014/11/new-study-reveals-americas-movie-viewing-habits/.

Mahmoud, M. and S.H. Elham, 2012. The impact of marketing mix on attracting audiences to the cinema. International Business and Management, 5(1): 99-106.

Mariah, A. and Nur Hanini, 2014. Filem Tempatan. Sasaran, Jurnal Kritikan Media, 67 (Sesi Mac-Julai): 66-68. Available from suu.com/amirulakhbar/docs/sasaran_sept_2014.

Mark, L., 2008. Creativity at work: On the globalization of the film industry. Danmark: Frederiksberg: Creative Encounter.

Mustafa Mahmoud, Y., 2009. Going to the movies: An investigation of factors influencing Egyptian audiences movies choices. Available from http://offscreen.com/view/going_to_the_movies.

Oxygen, M., 2009. Film viewing habits - UK - September 2009. Available from http://academic.mintel.com/display/394715/#.

Pham, H.H., T.T. Vo Thi and N.K. Mai, 2015. Film-induced tourism: Factors affecting vietnamese intention to visit Korea. Journal of Economics, Business and Management, 3(5): 565-570.

Ramanathan, R., 2002. Introductory econometrics with applications. 5th Edn., Ohio: South-Western, Thomson Learning.

Rice, J., 1984. Bandwidth choice for nonparametric regression. Annals of Statistics, 12(4): 1215-1230.

Schwarz, G., 1978. Estimating the dimension of a model. Annals of Statistics, 6(2): 461–464.

Shibata, R., 1981. An optimal selection of regression variables. Biometrika, 68(1): 45-54.

UK Film Council, 2007. A qualitative study of avid cinema-goers. Available from http://www.bfi.org.uk/sites/bfi.org.uk/files/downloads/uk-film-council-case-study-a-qualitative-study-of-avid-cinemagoers.pdf.

Vasan, A., 2005. Films and TV: Viewing patterns and influence on behaviours of college students. Health and Population Innovation Fellowship Programme Working Paper, No. 13. Available from http://www.popcouncil.org/uploads/pdfs/wp/India_HPIF/013.pdf.

Zainodin, H.J. and G. Khuneswari, 2009. A case study on determination of house selling price model using multiple regression. Malaysian Journal of Mathematical Sciences, 3(1): 27-44.

Zainodin, H.J., G. Khuneswari, A. Noraini and F.A.A. Haider, 2015. Selected model systematic sequence via variance inflationary factor. International Journal of Applied Physics and Mathematics, 5(2): 105-114.

Zainodin, H.J., A. Noraini and S.J. Yap, 2011. An alternative multicollinearity approach in solving multiple regression problem. Trends in Applied Science Research, 6(11): 1241-1255.

Zainodin, H.J., A. Noraini and S.J. Yap, 2014. Number of parameters counting in a hierarchically multiple regression model. Science International, 2(2): 37-43.