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Location Attractiveness as a Major Factor in Museum Visitors' Choice and Satisfaction

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This paper is intended to give a contribution to the debate on the functional relationship between the museum and the local territory; more specifically, the aim of this study is to understand the role of a museum location in attracting visitors and influencing their processes of choice and satisfaction. The study follows, in particular, a previous study conducted by Mariani and Mussini (2013) based on Fondazione di Venezia data, with a view to better contextualization level. Previous studies have examined the role of museums in enhancing the image of a destination and in attracting and conveying additional tourists' fluxes, arguing that although not all museums are a destination of choice for visitors, a great museum or a strong exhibition program still does represent a national and international attraction. This paper overturns this argument investigating whereas an appealing location (such as a tourist destination) can influence prospective visitors about the level of attractiveness of a pay cultural event taking place therein. A questionnaire was developed and data were collected at the Palazzo Ducale in Venice, Italy, in 2007, during the art exhibition "Venezia e l'Islam 829-1797", via 501 face-to-face visitors interviews. The research model analyzes data through the conjoint analysis and the descriptive statistics. Results show that the exhibition location has been a relevant factor in influencing the visitors' decision process linked to the attendance of the event. Data show that, for the majority of visitors, the exhibition had been located elsewhere, they would not have visited it. Thus, an appealing location or a structured tourist destination may function as an attractive platform that may contribute to enforce the overall visitor's satisfaction with regard to his or her attendance to a cultural event. Furthermore, such a fact depends on specific objective variables (e.g., level of education, age), although no significant differences were reported between segments based on other socio-demographic characteristics such as sex. To conclude, arts and cultural managers should market and position cultural events in locations that can function as attractive, thus as emotionally driven experience consumption sites. Furthermore, they should consider both the cognitive and the emotional aspects of visitor's experience when designing and planning their events, as well as when assessing visitor's satisfaction. Cognitive and emotional aspects should be considered simultaneously when measuring visitors' satisfaction. In shaping visitors' satisfaction, emotions, such as the pleasure to be in a particular location, are more significant than cognitive aspects, such as the theme of the exhibition.

Introduction

The subject of museums in relationship to their local territory, communities, and economies appears to be of great interest from a theoretical perspective and form a practical point of view. In fact, taking into account cultural tourism, cultural economics, and urban planning studies, as well as managerial implications for museums, the current issue of museums and territories today results to be topical.

Earlier researches have mainly studied the role of museums in enhancing the image of a destination and in magnetizing and conveying supplementary tourists' fluxes. Furthermore, some authors have argued that, even though not all museums are a precise destination of choice for visitors, still, a recognizable and famous museum or a strong exhibition program may often represent and embody a national and international attraction.

The paper follows, in particular, a previous study conducted by Mariani and Mussini (2013) based on Fondazione di Venezia data, with a view to better contextualization level. The novelty of this paper is represented by the fact that the study overturns this argument. In fact, the paper investigates whether an appealing location (such as a tourist destination) can be regarded as an influencing factor that determines, in prospective visitors, the level of attractiveness of a pay cultural event taking place therein.

In order to answer such research question, this paper firstly reviews some literatures on visitor's satisfaction, perceived quality, emotional path, and consumer behavior. Secondly, this paper analyzes data collected through a questionnaire carried out at Palazzo Ducale in Venice, Italy, during the art exhibition "Venezia e l'Islam 829-1797", via 501 face-to-face visitors interviews. Data analysis is conducted through the conjoint analysis and the descriptive statistics.

Results and conclusion will try to point out whether an exhibition location can be considered as a relevant factor able to influence the visitors during their decision making process linked to the attendance of the event. In the case of this study, the paper argues that if the exhibition had been located elsewhere, visitors would not have visited it. Taking into account such assumption, an appealing location or a well-structured tourist destination may then function as an attractive platform that can contribute to enforceing the overall visitor's satisfaction with regard to his or her attendance to a cultural event. Therefore, arts and cultural managers should position events in a location that can be perceived as an attractive one or as an emotionally-driven experience consumption site. In fact, in determining visitors' satisfaction, emotions, such as the enjoyment to be in a particular location, might be as significant as some cognitive aspects such as the theme of the exhibition, or even more determinant.

Literature Review

Visitor's Satisfaction

Previous studies have frequently observed the role of cultural events and cultural institutions in the attractiveness of a determined destination (a city or a definite area). Specifically, the majority of such studies have collectively examined the role of museums in reinforcing and regenerating the image of a place and in attracting and conveying additional tourists' fluxes. A number of studies argue that although not all museums are a destination of choice for visitors, still a great museum, an architecturally significant building, or a strong

exhibition program do represent a national and international attraction. This paper overturns this argument. It investigates whether an appealing location such as a tourist destination can influence prospective visitors and the level of attractiveness of a pay cultural event that takes place therein. More precisely, this study examines whether location plays a role in the overall visitor's satisfaction and consumer behavior. In sum, the paper verifies whether an appealing location, thanks to its cognitive and emotional features, may function as an attractive platform for cultural events through which a visitor's satisfaction may influence his willingness-to-pay.

The function of marketing in cultural services and cultural tourism seems more and more relevant. Such fact is particularly evident considering the interest shown by numerous cultural and artistic subjects such as foundations, museums, or exhibitions in visitors' judgments and experience estimation and perceptions' relation to satisfaction.

Visitor's experience turns out to be a strategic idea in cultural marketing as tourists' satisfaction is frequently influenced by the overall involvement attained; they look for a full and complete experience that can bring entertainment, knowledge, and culture together. In order to realize complete and satisfactory experiences for visitors, museums realize a growing number of public-involving actions and supply a range of digital and non-digital tools. These circumstances are also developed in order to facilitate the educational experience, and to enhance the overall visitor involvement.

In this sense, the museum (within the exhibition) becomes an occasion for supplementary embellishment of visitors' appreciation (Colbert, 2003). Such background explains why museums and exhibitions offer a variety of different services (e.g., educational programs, bars, restaurants, bookshops, events, etc.) aimed to enhance the global experience in terms of accessibility and various significances transmitted to the visitors. Moreover, museums enforce the general tourism product of a destination by offering a set of emotions linked to a peculiar location and moment, which is frequently inaccessible somewhere else (Tuft & Milne, 1999).

Museums then, contribute to the creation of a broad cultural structure aimed to spread experiences and knowledge (Herreman, 1998), and at the same time, supply "hereness" emotions (Kirchenblatt-Gimblett, 1998).

Among all these factors which clearly affect the visitor's satisfaction, the location of the museum appears therefore another significant element that deals with visitors' emotions and that may influence their level of satisfaction and their consumer behavior.

Marketing literature has extensively debated in consumer's satisfaction (among others: Belk & Wallendorf, 1989; Gerson, 1994; Chakrapani, 1998). Although past literature has focused on observing satisfaction by estimating consumers' formulating of perceived quality from their assumptions, the latest literature has understood consumers' emotions as a main factor in generating satisfaction. Based on such assumption, this paper considers an additional determinant in generating visitor's satisfaction which is the "exhibition" here considered as a conveyor of cultural assets and products. Therefore, this study assimilates a new location-based theoretical path. In fact, despite the useful correlation that encloses expectations and perceived quality in order to measure visitor's satisfaction, this paper argues that participation and emotions are also relevant to cultural events, and that an attractive location positively influences both (participation and emotions).

Among all the various resources, benefits, and tools supplied by museums, taking into account emotional factors into the satisfaction's construct may result in some interest when assuming that the preponderance of benefits is founded on the visitors' involvement. An attractive location, such as a famous touristic destination, simultaneously represents an added value in the overall visitor's experience and affects museum visitors' emotions.

Effectively, visits to cultural attractions and events are typically a minor activity and not the major incentive for visiting a destination (McKercher, 2004). Thus, considering a museum, an appealing location (such as a tourist destination) can influence prospective visitors and determine the level of attractiveness of a pay cultural event, such as an exhibition taking place therein.

In this paper, a particular type of cultural tourist will be taken into account: such profile views art and culture as an "extra" beside another principal motivation, which is represented by the attractive tourist destination (Silberberg, 1995).

Moreover, an attractive tourist destination represents, in visitors' mind, a particular level of emotion connected to enjoyment (Dolnicar, 2002). Taking into account visitor's satisfaction, previous literature underlines the outcome of service quality (Caldwell, 2002; Harrison & Shaw, 2004), without taking into account emotions such as the enjoyment resulting from the exhibition's location.

In this paper, results of a survey are proposed in order to enlighten the creation of visitor's satisfaction from the relationship between cognitive opinions and affective opinions, and to demonstrate the role of positive emotions linked to the exhibition location when such location is represented by an appealing tourist destination. Empirical analysis performed in the Doge's Palace during the "Venice and Islam 829-1797" art exhibition held in Venice in 2007 (July 25-28, November, 2007) allows this study to formulate conclusions and establish managerial implications.

As said, the topic of visitor's satisfaction is extensively discussed in literature. First and foremost, the concept of satisfaction has been variously identified, which means that the concept itself is heterogeneous by its nature.

Conventionally, the concept was judged to be a cognitive condition, subjective to precedent perception, and had virtual nature because it is the consequence of the association between a subjective experience and a precedent base of reference (Churchill & Surprenant, 1982; Oliver & Desarbo, 1988). Lately, literature has agreed on the fact that a limited cognitive path would result inappropriately in shaping satisfaction's measuring standards. Moreover, some authors have underlined the requirement to value satisfaction through emotions (Philips & Baumgartner, 2002; Wirtz & Bateson, 1999). Moreover, Wirtz, Mattila, and Tan (2000) specifically emphasized the implications of taking into account emotions when observing consumer's satisfaction in relationship to services. Services, in fact, have an experiential nature.

For this reason, in this paper, instead of considering the exhibition as a product, the exhibition is viewed as a benefit provided by the museum. Moreover, for the purpose of this study, satisfaction will be viewed as the total evaluation of different aspects and elements of such benefit, but also as the sum of the emotions developed both by its cognitive and affective attributes.

The location of the exhibition is in fact a relevant part of the overall visitor's experience and when the location is an appealing and attractive tourist destination, this will affect the visitors' perceived quality, visitors' emotions, and the general level of satisfaction.

By assuming the cognitive path in order to observe satisfaction, literature recognizes the disconfirmation model of expectations (Oliver & Swan, 1989). Such literature assesses that satisfaction has an active role in disconfirmation. At the same time, Oliver (1997) assessed that disconfirmation has an active role in an individual's realization and expectation. Therefore, an individual may be satisfied when he reaches expectation. At the same time, if a negative disconfirmation of an expectation brings non-satisfaction, a positive disconfirmation enhances satisfaction. In reaction to such theories that in the end agreed with assessing that

consumer behavior is mainly connected to the good's service, function, and perceived quality, some literatures started to observe consumer behavior through the lens of emotions, despite their uncertain nature (Bagozzi, Gopinath, & Nyer, 1999).

In order to prove that an appealing location of an exhibition affects visitor's satisfaction, both theoretical paths are useful. In fact, if visitors certainly evaluate the exhibition perceived quality, compare perceived quality and expectation, and pass through a confirmation or disconfirmation procedure in order to assess their satisfaction (cognitive path), they also evaluate through emotions if the exhibition attains or even surpasses expectation.

This paper argues that an appealing location is linked to perceived quality but also stimulates emotions. Therefore, an appealing location impacts visitor's satisfaction.

Quality, Satisfaction, and Consumer's Behavior

Predominantly, service and product quality studies focus on a cognitive approach (Vida & Reardon, 2008) while satisfaction may be an emotional effect following experiences (Lee, Perick, & Crompton, 2007). However, in order to measure quality and satisfaction, there are different paths: for instance, some literatures attempt to evaluate satisfaction taking into account particular features such as locations (Truong & Foster, 2006). In order to overtake some theoretical issues that emerge when the evaluation of satisfaction is not distanced from the measurement of locations' features, it is impossible to observe the influence of every particular group' features on visitor satisfaction. Therefore, as for conventional marketing theories (Oliver, 1997), some authors consider satisfaction and quality as different frameworks (Yoon & Uysal, 2005). A mainstream section of service marketing literature considers satisfaction as an affective effect that derives from cognitive outcomes to quality perception which follows service experiences.

Although the main theoretical approach considers satisfaction as an effect of service quality (Brady, Cronin & Brand, 2002), Bolton and Drew (1991) positioned satisfaction before service quality. Moreover, while Parasuraman, Zeithaml, and Berry (1994) assessed that the path of such link leans on the fact that measurements may be done at a general or at a transaction level, another study affirms that the service satisfaction/quality/behavioral purpose model may function in the two levels (Brady, Knight, Cronin, Tomas, Hult, & Keillor, 2005).

Tourism literature generally considers the mainstream quality/affects/satisfaction perspective and assesses that the quality's performance is sustained in the backgrounds of attractions at a tourist destination (Chen & Tsai, 2007). More precisely, some authors assess that perceived service quality impacts visitors' satisfaction (Lee et al., 2007) whilst others distinguish among "push motivations" (tourist emotions, impulses, animations, etc.) which straight impact visitors' loyalty to a destination, and "pull motivations" (linked to the features of a destination) which straight impact visitor's satisfaction (Yoon & Uysal, 2005).

Taking into account such theoretical framework, this paper argues that the location of an exhibition (represented by an appealing tourist destination) enhances the perceived quality of the exhibition intended as a service provided by the museum. Therefore, the location impacts visitor's satisfaction.

In literature, consumer's behavior is generally observed through the cognitive/affective/conative model (Lam, Shankar, Erramilli, & Murthy, 2004). Authors state that the cognitive element goes before emotional effects (Chiou & Droge, 2006). At the same time, some studies assess that emotional effects guide consumer's behavior. In fact, affective satisfaction intercedes with the response of cognitive service quality on conative

consumer behavior (Cole & Illum, 2006; Dabholkar, Sheperd, & Thorpe, 2000). Thus, the relationship between perceived quality and fidelity is in part influenced by general satisfaction. Moreover, service quality, satisfaction, and service value all straightly influence consumer's behavior when evaluated jointly (Brady et al., 2005). In the midst of these concepts, satisfaction brings the most forceful influence on behavior, followed by service quality and service value. However, satisfaction and service value also influence the relationship between perceived service quality and consumer's behavior.

For the aim of this research, this paper considers consumer's behavior as the degree of the willingness-to-pay the exhibition ticket. Such degree depends whether the exhibition itself is located in an appealing tourist location or not. In conclusion, this study assesses that the appealing location of an exhibition impacts the service (the exhibition) perceived quality, affects the overall visitor's satisfaction, and influences visitor's behavior in terms of willingness-to-pay the exhibition ticket. Based on this background, this paper suggests that the perceived quality of a destination/location's features directly positively influences visitor's behavior, and that visitor's satisfaction is positively connected to visitor's behavior.

Emotions, Satisfaction, and Consumer's Behavior

As previously stated, marketing literature has assessed that emotions should be considered as important factors in the conceptualization of consumer's satisfaction (Oliver, 1997; Wirtz et al., 2000); moreover, in order to understand visitor's satisfaction, tourism management and tourism marketing scholars have evidenced how emotional assets must be analyzed alongside with cognitive assets (Zins, 2002). In particular, Russel and Pratt (1980) have identified two major dimensions of emotions, such as pleasure and arousal: the first dimension indicates the degree of enjoyment of an individual who lives a specific circumstance; the second dimension indicates the degree of motivation and dynamism of an individual who lives in a specific circumstance.

For the aim of this study therefore taking into account arts management, arts marketing, and cultural tourism issues, when the topic relates to the particular case of museums exhibitions, both dimensions (pleasure and arousal) appear to be significant. In fact, in order to demonstrate that an attractive destination/location for an exhibition may function as a strategic tool to attract visitors, it is useful to take into account some features of tourists and visitors, which refer both to pleasure and to arousal.

Observing museums, there is evidence that tourists enhance their desire to visit museums when abroad and when based on an attractive tourist destination (McIntyre, 2007; Prentice, 2001). In other terms, they are more dynamic and motivated. Literature also assesses that tourists that visit museums based on an appealing tourist destination are already predisposed to do so (Harrison, 1997). At the same time, other studies show that tourists under the specific circumstance which consists in visiting an appealing destination feel well and are happy (Dolnicar, 2002). Moreover, researches show that highly motivated individuals will assumingly engage at a deeper level with cultural attraction and, as a consequence, will have a more meaningful and emotional experience. Thus, in order to let the visitor experience happiness and pleasure, if a museum's objectives include the stimulation of the visitors' motivations and the enhancement of their knowledge, such museum will certainly attract more visitors. This paper argues that a museum, in order to enhance such approach, should strategically take into account the fact that to be based on an attractive tourist destination might help. On the basis of paper's assumptions, in fact, an attractive location enforces visitor's satisfaction.

Literature has identified a connection between the happiness perceived throughout the consumer's experience and the achieved consumer's satisfaction. Taking into account tourism management literature,

scholars have agreed that with the enhancement of happiness felt by tourists when visiting a destination, there is an improvement of their levels of satisfaction (Westbrook & Oliver, 1991; Wirtz & Bateson, 1999). Therefore, an appealing tourist destination should enforce such happiness. With the aim to observe satisfaction, Woodruff, Cadotte, and Jenkins (1983) have evidenced a positive connection between disconfirmation and emotions. Nevertheless, in tourism management literature, the connection between disconfirmation and happiness is not easy to find and the disconfirmation itself appears to be more related to the perceived quality (Bigné, Andreu, & Gnoth, 2005). Therefore, the perceived quality seems representing the principal source of visitors' emotions such as happiness. This paper then firstly argues that there is a positive correlation between the emotional experience (linked to the degree of happiness) and the cognitive experience (linked to the degree of perceived quality). Therefore, perceived quality positively affects happiness feelings and happiness feelings affect visitor's satisfaction. Secondly, this study argues that if an appealing location affects the degree of perceived quality, in order to enhance visitors' happiness feelings and visitors' satisfaction, museum or a museum's exhibition should be based on an attractive tourist destination.

Moreover, literature that has studied services and satisfaction has stated that satisfaction influences the desire to replicate the purchase and affects the post-purchase behavior (Keaveney, 1995; Oliver & Swan, 1989; White & Yu, 2005). Therefore, visitor's satisfaction influences the motivation of the exhibition visit, this being intended, for instance, as its willingness to pay the entrance ticket. In the framework of museums and museums' exhibitions, such statement might be identified as a more intense desire and willingness to buy a ticket for an exhibition when such exhibition is located in an attractive location which is represented by an appealing tourist destination.

Therefore, the location of the exhibition directly affects the intensification of the exhibition experience, evaluated as visitor's aptitude in buying the ticket of the exhibition. This will generate for the museum an economic surplus. Moreover, it is expected that satisfied visitors will more intensively feel the exhibition experience and, for instance, will be more engaged and more interested in the exhibition itself. In sum, with an increase of the degree of visitor's satisfaction, it is possible to see an enhancement of the degree of visitors' engagement and motivation.

In order to quantify the impact of an appealing location in the framework of an exhibition, this paper considers the appealing location as a "change" in an attribute of the exhibition in monetary terms. Finally, in order to reveal the trade-offs among its attributes in terms of total revenue determinants of visitor demand in generating an economic surplus or shortfall, this study uses a new coefficient for the economic valuation of the "Venice and Islam 828-1797".

Research Methods

Preference Model

By a broad use of the study of Mariani and Mussini (2013), it is possible to declare that, in general, studies investigating willingness-to-pay for environmental or cultural goods use either contingent valuation method or discrete choice experiment as the stated preference elicitation technique (Boxall, Adamowicz, Swait, Williams, & Louviere, 1996; Bille-Hansen, 1997; Sanz, Herrero, & Betade, 2003; Mazzanti, 2003).

The focus is on ranking scale and opts for a very general preference model used in traditional conjoint analysis (CA). In fact, this paper exploits the information contained in the ranking conjoint format by regressing the individual responses on a piece-wise linear function of all the attribute levels which describe the good in

question. Since conjoint data are collected on a nonmetric scale, a nonmetric estimation procedure like a monotone regression that involves a monotonic transformation of the dependent variables (MONANOVA) would be more appropriate than ordinary least-squares regression (OLS) multiple regressions; however, as demonstrated by Carmone, Green, and Jain (1978) and Cattin and Wittink (1982), the OLS regression provides similar parameter estimates for both ranking and rating scales, therefore it seems a reliable estimation procedure. This function is defined as follows:

$$U_k = \sum_{i=0}^{n} \beta_i x_{ik} \tag{1}$$

where x_0 is equal to 1 and n is the number of all levels of the attributes which define the combination of a given good. Each variable x_{ij} is a dichotomous variable which refers to a specific attribute level, and it equals 1 if the corresponding attribute level is present in the combination of attributes, which describes the alternative k, otherwise that variable is 0. As a result, the utility associated with alternative $k(U_k)$ is obtained by summing the terms $\beta_i x_{ik}$ over all attribute levels; where β_i is the partial change in U_k for the presence of the attribute level i, holding all other variables constant. This study refers to this piece-wise linear function as a part-worth function model which gives a specific utility value for each level of the considered attributes, usually referred to as part-worth utility. As a consequence, the number of parameters estimated by assuming the part-worth specification is larger than that required by alternative preference model specifications, such as the vector model form and the ideal model.

The Coefficient of Economic Valuation

Having chosen the preference model (and the ranking scale), this paper then proceeds to use a coefficient of economic re-evaluation for a hypothetical change that occurs in the combination of the attribute levels. Taking into account the study of Mariani and Mussini (2013), this paper introduces the following notation:

- Let b be the current profile (hereafter, status quo) of the good or service;
- Let i (with $I = 1,…, n$) be the alternative profile which differs from b for the attribute level i;
- Let U_b denote the sum of the part-worth utilities associated with the status quo of the good or service;
- Let U_i denote the sum of the utility scores associated with the alternative profile i.

It is possible to calculate the total utility variation, obtained by replacing one attribute level of the status quo b with the attribute level i, that is when passing from the status quo b to the alternative profile i. M_i indicates the ratio, which results by dividing the difference between the total utility of the alternative i and the status quo one by the total utility of the status quo, formally:

$$M_i = \frac{U_i - U_b}{U_b} \tag{2}$$

where U_b is assumed to be different from 0. The ratio in equation (2) indicates whether the status quo modification generates a loss or a gain in term of total utility. It is evident that a zero value for M_i represents the indifferent situation between loss and gain in terms of total utility. However, the utility modification arising from an attribute level modification can be considered more or less important by respondents. Consequently, such an attribute level modification can have a more important economic impact than a utility modification which has a similar intensity but involves a less relevant attribute.

As a solution, this paper proposes to weigh M_i by the relative importance of the modified attribute. The range of the utility values (from highest to lowest) for each attribute provides an indicator of how important the attribute is compared to the remaining attributes. Attributes with larger utility ranges play more important roles than those with smaller ranges. For any attribute j, the relative importance can be computed by dividing its utility range by the sum of all utility ranges as follows:

$$I_j = \frac{\max\left(W_j\right) - \min\left(W_j\right)}{\Sigma_{j=1}^{J}\left[\max\left(W_j\right) - \min\left(W_j\right)\right]} \tag{3}$$

where J is the number of attributes and W_j is the set of part-worth utilities referred to the various levels of attribute j. Usually, the important values are represented as percentages and have the property of summing to one hundred. Otherwise, it is possible to express these important values in terms of decimal fractions whose sum is one. If this is the case, entering the importance of the modified attribute in equation (2), the coefficient formulation becomes:

$$MI_{ij} = M_i * I_j \tag{4}$$

Since U_b can be negative, the general formulation of the coefficient is:

$$MI_{ij} = \begin{cases} \dfrac{U_i - U_b}{U_b} * I_j & U_b > 0 \\[2mm] \dfrac{U_b - U_i}{U_b} * I_j & U_b < 0 \end{cases} \tag{5}$$

It is possible to use equation (5) for estimating the variation of the total revenue generated by assuming a change in the status quo profile. Given the total revenue associated with the status quo profile, π, the coefficient of economic re-evaluation is expressed as follows:

$$V_{ij} = MI_{ij} * \pi \tag{6}$$

where V_{ij} denotes the amount of the revenue variation. Revenue variation in equation (6) is obtained by supposing that the monetary attribute referred to a non-market good (price or admission charge) varies in proportion to the change in total utility of that good.

Although this assumption seems restrictive, this study argues that if the monetary amount asked to a user (the visitor) concerning a non-market good (the exhibition) reflecting on how that user values the combination of attributes of the good in terms of utility, it is credible to assess the economic value of a change in the combination of attributes as a function of the utility and importance of the modified attribute. In addition, it is possible to notice that CA serves the scope of approximating the real structure of preferences, given that only a partial knowledge of preferences can be known. Therefore, this paper suggests using the coefficient of economic re-evaluation as a monetary indicator, which approximates the impact of a given utility change in monetary terms.

Application to an Exhibition

The path of the exhibition begins with the legendary transfer of San Marco's corpse from Alexandria to Venice (827) and continues to the end of the "doge" era in 1797, which was hosted in Venice itself in the

symbolic Doge's Palace, after Paris and New York. In this large-scale exhibition on the relationship between Venice and the world of Islam, many of the exhibited works were rented by European and American museums and some private Venetian collections.

Institut du Monde Arabe in Paris, Metropolitan Museum of Art in New York, and Musei Civici Veneziani worked together to produce this exhibition that consisted of various sections illustrating different chronological phases and topics of the millenary relationship between the Venetian and Islamic civilizations.

Survey Design and Data Collection Method

Data were collected by using face-to-face interviews in which each respondent was asked to rank alternatives included a set of choices presented within a questionnaire[1].

Starting from a full factorial, which comprises ($2 \times 2 \times 2 \times 3 = 24$) profiles, it created a fractional factorial design for main-effects, which included eight profiles (Addelman, 1962). The alternatives included in this set were taken from a full factorial design produced by a permutation of all the attribute levels. Each alternative is described by four attributes: admission charge (three ticket levels), location (Venice or in a different place), modality of gathering information about the exhibition (provided to visitors by organizers and information gathered by visitors autonomously), and additional information services (presence or absence of additional multimedia services). The sample comprises 501 respondents who were interviewed after the visit.

Research Results

In the paper's sample, one third of the visitors ($N = 147$) reported being completely or partially agree to have visited the exhibition just because the location was Venice. At the same time, two out of three of 294 respondents would still have visited the exhibition in a different location. Sixty visitors said the location was indifferent.

After dividing the interviewed visitors into two groups, taking into account if they did agree or not to the sentence "I visited this exhibition just because it's in Venice", the total respondents become 441 units (Table 1).

The profile of the visitors of the exhibition shows that 59.0% are women. In most cases, they are more than 45 years of age; the modal age group (28.6%) is 55-64, while young people up to 24 are 5.9%. One third of the sample is foreign national (not Italian) and its level of education is postgraduate degree, degree, or first degree. In most of the cases, they are employees (27.9%) and only 7.3% are students. Overall, they were satisfied with the exhibition (92.7%).

One in three visited the exhibition influenced by the fact that it was in Venice. Especially males (35.91%) were more in agreement with this question than women (31.54%). The proponents of Venice have a higher age (the classes < 35-44 > and < over 55 > are better represented), a high level of education (34.4% with postgraduate degree, degree, or first degree), and 42.2% are foreigners. For pensioners, it has been reached the value of 50.8% and 28.1% for students.

Young people, up to 34 years, as well as the middle class of age (45-54 years old), are less influenced by the location. Women are less in agreement (31.5%), as well as more generally Italian visitors (28.9%). The level of

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[1] The questionnaire was divided into four sections. In the first section, the respondent was asked to give the reasons that induced him/her to visit the exhibition and to describe the visit through a series of either bundled or unbundled questions. In the second section, the respondent gave answers about the sources of information used to gather information concerning the exhibition. Furthermore, in this section, the respondent could express a judgment concerning the use of complementary services to be implemented in the visit in accordance with his/her experience. In the third section, the respondent was asked to rank a set of alternatives concerning the arrangement of the exhibition. The last section was devoted to collecting information on the socio-economic characteristics of the respondent.

education is up to secondary school diploma (31.3%) and the profession is entrepreneur (28.7%), employee (30.1%), teacher (29.5%), and student (28.1%).

Table 1

"I Have Visited the Exhibition Just Because It's in Venice"

		% row agree	% row do not agree	% column	*N.*
Age (years)	Up to 24	23.08	76.92	5.90	26
	25-34	26.53	73.47	11.11	49
	35-44	34.38	65.63	14.51	64
	45-54	29.41	70.59	23.13	102
	55-64	39.68	60.32	28.57	126
	65 or more	35.14	64.86	16.78	74
Total				100.00	441
Gender	Male	35.91	64.09	41.04	181
	Female	31.54	68.46	58.96	260
Total				100.00	441
Citizenship	Italian	28.91	71.09	66.67	294
	Foreign national	42.18	57.82	33.33	147
Total				100.00	441
Educational level (completed)	Postgraduate degree/degree or first degree	34.35	65.65	66.67	294
	Up to secondary school diploma	31.29	68.71	33.33	147
Total				100.00	441
Job	Entrepreneur/ freelance professional	28.74	71.26	19.73	87
	Employee	30.08	69.92	27.89	123
	Teacher/professor	29.49	70.51	17.69	78
	Pensioner	50.79	49.21	14.29	63
	Student	28.13	71.88	7.26	32
	Other	36.21	63.79	13.15	58
Total				100.00	441
Overall. Have you been satisfied with this experience?	Satisfied	34.55	65.45	92.71	356
	not satisfied	28.57	71.43	7.29	28
Total				100.00	384

Source: own calculations on data provided by the "Fondazione di Venezia".

Discussion

Data show slight differences but open up some reflections:

• those who consider Venice as an added value for the location result within a profile which is more tourism-oriented than cultural exhibition-oriented having a profile more like a tourist than like a person interested in the exhibition; the presence of cruise passengers could influence the selection of the visitors, who may find the ticket of the exhibition in the holiday package;

• those who consider the cultural/didactic aspects of the exhibition have a profile of induced choice. Young, Italian (probably in Venice just for the exhibition), with a high level of education considering the age, teacher, or student (school trip);

• those who consider the exhibition as a whole unique meaning (Venice = culture) have a profile of awareness of choice. They are professionals or employees, aged between 45 and 54 years old.

The satisfaction of the experience of visiting the exhibition seems to depend on location. In the sample, 92.7% of visitors were fully or partially satisfied. Among those who visited the exhibition because it took place in Venice, 34.6% were satisfied and 28.6% not satisfied.

This is the global framework, it is now calculated the corresponding revenue variation by using the coefficient of economic valuation when changes in the status quo are hypothesized. This paper starts now estimating part-worth utilities and the relative importance for each attribute and uses these estimates to obtain a valuation of revenue variation associated with a change in the combination of the attributes describing the exhibition in question. The study estimates the part-worth utilities using OLS, and shows the relative importance assigned to the corresponding attribute at the first place, it found the price after information during the exhibition, venue in Venice and general information before the exhibition. It also reported the utilities for Venice attribute level (Table 2).

Table 2

Part-Worth Utilities and Attribute Importance Values

Attribute level	Part-worth utility	Attribute importance
Venue: Venice	0.692	0.23526
Venue: Other place	-0.692	
Inf. concerning the exhibition		0.13948
Additional inf. services		0.24974
Admission charge		0.37552
Intercept	4.183	
U_b	3.953	
U_i	2.569	

Source: own calculations on data provided by the "Fondazione di Venezia".

Visitors prefer the venue in Venice rather than in a different place and seem more interested in collecting information about the exhibition autonomously and with a preference to the provision of additional multimedia services, which makes the exhibition easier to understand. Table 1 also presents the importance for each attribute.

The most important attribute in terms of relative importance is the admission fee when modality of gathering information appears as the least relevant attribute whereas location and additional multimedia services show a similar level of relative importance.

In accordance with the Mariani coefficient, the part-worth utilities and relative importance values can be used to estimate revenue variation generated by the change in the status quo (Venice; information concerning the exhibition induced; additional information services absent).

Therefore, it computed the total utility associated with the status quo by summing the part-worth utilities of the corresponding attribute levels. It is possible to hypothesize any change in the status quo combination of the attribute levels and calculate the total utility assigned to that alternative.

In Table 3, row 1 outlines the combination of attribute levels specifying the actual exhibition (status quo). If it hypothesized that the revenue generated by this status quo is EUR 100,000.00 (π), it is possible to estimate the revenue variation induced by a single attribute level change as shown in Table 3. That revenue decreases if the venue changes (EUR -6,326.00).

Table 3

Economic Re-evaluation by Changing a Non-monetary Attribute

Status quo	Modification of attribute *j*	Number of observations	V_{ij} (100,000.00 €)
Venue in Venice	Other place	501	-6,326.00
Unsatisfied		216	-5,291.91
Satisfied		158	-7,597.48

Source: own calculations on data provided by the "Fondazione di Venezia".

This paper also investigates how the degree of visitor's satisfaction affects the preference structure in monetary terms. Two sub-groups have been created: a group composed of 158 satisfied visitors and another group of 216 unsatisfied visitors[2]. This paper aims to assess the effect of visitor's satisfaction on the revenue variation induced by changing the attribute combination. Thus, it is possible to calculate the coefficient of re-evaluation for both groups (Table 3). That revenue variations are smaller (EUR -5,291.91) for unsatisfied visitors (for satisfied the value is EUR -7,597.48).

In this case, the monetary attribute's relative importance definitely exceeds the importance values of the other non-monetary attributes. This reduces the impact of a utility change generated by modifying a non-monetary attribute on the revenue variation.

Conclusions

Results suggest that choosing Venice as the location for the exhibition generates the larger gain in terms of total revenue variation, 6.3% of total revenue. The reason is that Venice represents an appealing tourist destination, for a third of the visitors, the location was important.

However, this study has shown how determinants of demand for the exhibition vary in accordance with actual visitor's opinion on the admission charge required for attending the exhibit. More specifically, when visitors believe that the admission charge is too high, the hypothetical revenue variations are smaller than for people who are happy with the price.

This study has esteemed visitor's willingness-to-pay in the Venice-located exhibition by exploiting all the information collected in a ranking or rating conjoint response format. In fact, this methodology may provide cultural managers and cultural events organizers with information on determinants of revenue variation. In order to answer the question of which determinants are the key drivers of visitor's behavior and business performance, the relationship between quality and satisfaction turns to be useful for both researchers and cultural managers.

The perceived quality of an appealing destination's offerings detained the cognitive aspects of consumer's behavior. The visitor's satisfaction framework encompasses both cognitive (e.g. the information used to gather information concerning the exhibition; the use of complementary services; the arrangement of the exhibition, etc.) and emotional aspects (the location), while the behavioral framework (the willingness-to-pay) represents the conative feature of visitor's behavior.

In sum, the location/tourist destination image is linked to the exhibition quality, to satisfaction, and to customer's behavior. In other words, an attractive tourist destination mediates the relationship between

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[2] A number of visitors (111) attended the exhibition with a cut price ticket or a complimentary ticket, the authors then excluded them from the sample.

exhibition quality and satisfaction, which translates into visitor's behavior or willingness-to-pay. In addition, visitor's behavior is directly related to tourist destination feeling and tourist destination attributes determine the perceived quality and satisfaction of an exhibition/museum's offering. Cultural organizations and cultural managers should then consider the most profitable way to invest in a new museum or in a cultural event, which is located in an attractive tourist destination. The expansion of the cultural tourism sector and improved accessibility of tourist destinations are enhancing competitiveness for cultural managers. Even though a museum comprises various particular cognitive and affective features, museums' visitors might take into account the location and consider the museum and its location as a single entity. Therefore, a visitor's satisfaction results from different cognitive and affective experiences involving various determinants that jointly establish the visitor's perception of the exhibition's attributes. For the satisfied ones, Venice is 7.6% of turnover, while the value for a few dissatisfied ones is 5.3%.

Understanding what drives visitor's satisfaction in a cultural organization represents a good foundation for increasing customer's retention. Moreover, the choice (and the valorization) of the location represents a fundamental input for any cultural organization strategy development and managerial improvements.

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Grand Strategies for Dealing With Chinese Local Government Debts

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Local governmental debts in China seem to be in a more precarious position than local government debts in the USA. The scale of Chinese local government debts far surpasses that of the USA. Further, Chinese local government debts appear to be expanding at an alarming rate in the past decade or so. This research focuses on grand strategies for dealing with Chinese local government debts. There are five research questions for this paper: 1) What is the size of the Chinese government debts? 2) Are Chinese local government debts controllable? 3) Who or what caused the rapid increase of the Chinese local government debts? 4) Is it possible to have individual accountability for increasing local government debts in the future? and 5) Will it be helpful to create a local government debt management organization in the Chinese central government? Based on the available literature, this analysis also utilizes in death interviews with 13 government officials, policy analyst, and scholars. First, this paper identifies the size and categories of debts related to Chinese local governments. Then this paper illustrates various ways and methods of Chinese local governments to obtain leverage. After analyzing the causes and origins of these debts, the research demonstrates a potential local systematic risk. By contrast to its advantages and disadvantages, the paper suggests that the local governmental debts need to be constrained. It is important to restrict debt growth in terms of issuing, buying, repurchasing, collateralizing, etc. within a legal framework. With the consideration of political mechanisms in China, the research suggests that the central government establishes a specific organization to help normalize the local governmental debts with the function of supervision and management. The research also believes that it will be an effective way to control the growth of local debts if the central government can hold the relevant top leaders/officials of local governments to be accountable for their performances related to debt accumulation.

Keywords: debt, debt size, local government, Chinese government, individual, accountability, debt management organization

Introduction

The fiscal crises in Greece and other countries have resulted in significant concerns over government debt

and its sustainability globally and China is not an exception (Li & Lin, 2011). Chinese local government debts have increased rapidly in recent years and thus have attracted attention from domestic and abroad commentators alike in various perspectives (Zhao, 2011; He, 2014; Yan, 2012; Haitong, 2014; Anonymity, 2014; Wei & Davis, 2015; Wildau, 2015; McMahon, 2015; Bloomberg, 2015). Many scholars and observers worry that local government debts in China are on the edge of a cliff and that an effective mechanism of controlling the growth of the debts has yet to be found (Shen, 2014; Nagao, 2015; Talley, 2014; Kwong, 2013; Kuijs, 2010).

Chinese government debts in general and Chinese local government debts in particular are a fairly recent phenomenon. By the end of 2004, it was estimated that Chinese sub-national government debts were close to 2.5 trillion RMB; by the end of 2009, it was estimated that Chinese sub-national government debts were about 10.0 trillion RMB (Zhao, 2011). According to Chinese government official auditing, by the end of June 2013, the direct Chinese local government debts were 10.9 trillion RMB and the indirect (contingent liabilities) Chinese local government debts were about 7.0 trillion RMB. Thus, the total local government debts were 17.9 trillion RMB by the end of June 2013 (Quanguo Zhengfuxing Zhaiwu, 2013). Chinese provincial authorities estimated that they had 16 trillion RMB in direct liabilities earlier this year (2015), and that, the total will surpass 23 trillion RMB including the contingent liabilities (Bloomberg, 2015). If the above figures are reliable, the Chinese local government debts (both direct and indirect liabilities) increased almost 10 times from the end of 2004 to the end of 2014! Both the current debt figure and the rapid increasing rate are alarming. Moreover, it is believed that the Chinese local government debts will become uncontrollable if effective measures are not put in action immediately.

China's local governments have utilized various ways to borrow money. First, Chinese local governments and their affiliated agencies have directly borrowed money in addition to their fiscal revenues and the central government transfer funds (Zheng, 2012). Thus, the public organizations that borrow the money are to some extent out of constraints (Feng, 2013). Second, the local governments are used to utilize Financing Vehicles [commonly called China's Local Government Financing Vehicles (LGFV)] to borrow money. It was estimated that there were more than 10,000 LGFV in 2013 (Zhang, 2013).

Why do so many Chinese local governments have large (and rapidly growing) budget deficits in the first place? It is difficult to find a unified answer. However, the 1994 fiscal reform seemed to have triggered the problem of local government receiving less revenue while bearing increasing responsibility of various public services and thus more expenditure compared to the previous years (M. Zhang, 2006). In addition, there are strong incentives to boost the economy through infrastructure (Zhao, 2004): additional roads, high speed rails, airport, bridges, utilities, homes, lucrative business hubs, and somehow unoccupied ghost towns. The Chinese local government leaders' performances have mainly been measured by the economy development (or GDP) and their promotions depend upon the GDP of local governments to a large extent (Zhao, 2004). Society wants officials to take the long view, but individual government bureaucrat just wants successes to last long enough for them to be promoted elsewhere (Hu, 2008; Jia, Liu, Zhang, Shi, & Sun, 2010).

The results of such swelling or expanding debts will be difficult to model or predict. Some authors have called it a "time bomb" (Guest Post, 2014; Song, 2013; Nagao, 2015; Zhang, 2013), or a Chinese local government debt crisis (Yan, 2012). Other commentators believe that there is an increasing likelihood of a Detroit-style default (Zhang, 2013). There are many negative consequences of a potential crisis, including decline of the property prices and slow-down of the economy growth, leading to international investment panic and even society-wide chaos (Lin, 2011; Huang, 2011).

In recent years, Chinese central government has tried different measures to regulate and control the local government debts. However, the results so far are not encouraging and can at best be considered mixed.

Given that the government debts have become a global crisis in general and Chinese local government debts receive a huge concern in particular, it can never be exaggerated for the importance of examining the Chinese local government debts as well as finding solutions. The main purpose of this research is to explore the root causes and origins of the Chinese local government debts and intends to propose solutions by developing targeted strategies and measures. This paper is thus intended to fill the literature gap and propose effective policy recommendations. To this end, this introduction clarifies the importance of the topic and addresses main problems. In section 2 of literature review, the historical evolution of Chinese local government debts will be reviewed; the definition of local debts will be carefully examined; especially, the importance of this study will be highlighted and the unique contribution of this study will be illustrated. In section 3, the research questions and research methods will be introduced. Section 4 identifies the research findings. Section 5 analyzes the findings and proposes some policy recommendations. Section 6 concludes the paper.

Literature Review

Size: Historical Evolution of Chinese Local Government Debts

From Table 1, it can be seen that before the Chinese grand policy of "Reform and Opening to the Outside" in 1978, China had generally tried to balance the budget. In the 29 years from 1953 to 1981, the government as a whole in 17 years has had either a balanced budget or a small surplus, and in the other 12 years had small deficits. It is understandable that China had adopted a budgetary policy called "balanced-budgetary or a-small-surplus policy" for those years. Chinese government has neither accessed to the international capital market nor is accustomed to borrowing money from the public (Li & Lin, 2011).

Table 1

Revenue Expenditures and Deficits of Central and Local Governments (Billion Yuan)

year	Total revenue				Total expenditure				Deficits		
	Total	Central	Local	% of central	Total	Central	Local	% of central	Total	Central	Local
1953	21.32	17.7	3.62	83	21.92	16.21	5.72	73.9	-0.6	1.49	-2.1
1954	24.51	18.77	5.74	76.6	24.41	18.37	6.04	75.3	0.1	0.4	-0.3
1955	24.92	19.34	5.58	77.6	26.27	20.1	6.18	76.5	-1.35	-0.76	-0.6
1956	28.01	22.21	5.8	79.3	29.85	21	8.85	70.4	-1.84	1.21	-3.05
1957	30.32	22.29	8.02	73.5	29.59	21	8.59	71	0.73	1.29	-0.57
1958	37.96	30.52	7.43	80.4	40.03	17.72	22.31	44.3	-2.07	12.8	-14.88
1959	48.71	11.87	36.83	24.4	54.31	24.93	29.38	45.9	-5.6	-13.06	7.45
1960	57.23	14.28	42.95	25	64.37	27.86	36.51	43.3	-7.14	-13.58	6.44
1961	35.6	7.66	27.94	21.5	35.6	16.03	19.57	45.0	0	-8.37	8.37
1962	31.55	9.3	22.04	29.7	29.48	18.16	11.32	61.6	1.87	-8.86	10.72
1963	34.22	7.89	26.33	23.1	33.2	19.23	13.97	57.9	1.02	-11.34	12.36
1964	39.95	10.08	29.87	25.2	39.37	22.48	16.89	57.1	0.58	-12.4	12.98
1965	47.33	15.61	31.73	33.0	46.00	28.42	17.58	61.8	1.33	-12.81	14.15
1966	55.87	19.64	36.22	35.2	53.76	33.91	19.85	63.1	2.11	-14.27	16.37
1967	41.93	13.24	28.96	31.6	43.98	26.99	16.99	61.4	-2.05	-13.75	11.7
1968	36.12	10.71	25.41	29.6	35.78	21.94	13.83	61.3	0.34	-11.23	11.58
1969	52.67	17.11	35.56	32.5	52.58	31.91	20.67	60.7	0.09	-14.8	14.89

Table 1 continued

Year											
1970	66.29	18.3	48	27.6	64.94	38.24	26.7	58.9	1.35	-19.94	21.3
1971	74.47	11.93	62.53	16.0	73.21	43.56	29.65	59.5	1.26	-31.63	32.88
1972	76.65	10.58	66.07	13.8	76.58	43.14	33.44	56.3	0.07	-32.56	32.63
1973	80.96	11.98	68.98	14.8	80.87	44.93	35.94	55.6	0.09	-32.95	33.04
1974	78.31	13.47	64.83	17.2	79.02	39.78	39.24	50.3	-0.71	-26.31	25.59
1975	81.56	9.66	71.9	11.8	82.09	40.94	41.15	49.9	-0.53	-31.28	30.75
1976	77.66	9.89	67.77	12.7	80.62	37.76	42.86	46.8	-2.96	-27.87	24.91
1977	87.45	11.39	76.06	13.0	84.35	39.37	44.98	46.7	3.10	-27.98	31.08
1978	113.23	17.58	95.65	15.5	112.21	53.21	59.00	47.4	1.02	-35.63	36.65
1979	114.64	23.13	91.5	20.2	128.18	65.51	62.67	51.1	-13.54	-42.38	28.83
1980	115.99	28.45	87.55	24.5	122.88	66.68	56.20	54.3	-6.89	-38.23	31.35
1981	117.58	31.11	86.47	26.5	113.84	62.57	51.28	55.0	3.74	-31.46	35.19
1982	121.23	34.68	86.55	28.6	123.00	65.18	57.82	53.0	-1.77	-30.50	28.73
1983	136.7	49	87.69	34.8	140.95	75.96	64.99	53.9	-4.25	-26.96	22.7
1984	164.29	66.55	97.74	40.5	170.10	89.33	80.77	52.5	-5.81	-22.78	16.97
1985	200.48	76.96	123.52	38.4	200.43	79.53	120.9	39.7	0.05	-2.57	2.62
1986	212.2	77.84	134.36	36.7	220.49	83.64	138.66	37.9	-8.29	-5.80	-4.30
1987	219.94	73.63	146.31	33.5	226.22	84.56	141.66	37.4	-6.28	-10.93	4.65
1988	235.72	77.48	158.25	32.9	249.12	84.50	164.62	33.9	-13.4	-7.02	-6.37
1989	266.49	82.25	184.24	30.9	282.38	88.88	193.50	31.5	-15.89	-6.63	-9.26
1990	293.71	99.24	194.47	33.8	308.36	100.45	207.91	32.6	-14.65	-1.21	-13.44
1991	314.95	93.83	221.12	29.8	338.66	109.08	229.58	32.2	-23.71	-15.25	-8.46
1992	348.34	97.95	250.39	28.1	374.22	117.04	257.18	31.3	-25.88	-19.09	-6.79
1993	434.9	95.75	339.14	22	464.23	131.21	333.02	28.3	-29.33	-35.46	6.12
1994	521.81	290.65	231.16	55.7	579.26	175.44	403.82	30.3	-57.45	115.2	-172.66
1995	624.22	325.66	298.56	52.2	682.37	199.54	482.83	29.2	-58.15	126.1	-184.27
1996	740.8	366.11	374.69	49.4	793.76	215.13	578.63	27.1	-52.96	151.0	-203.94
1997	865.11	422.69	442.42	48.9	923.36	253.25	670.11	27.4	-58.25	169.4	-227.69
1998	987.6	489.2	498.4	49.5	1,079.82	312.56	767.26	28.9	-92.22	176.6	-268.86
1999	1,144.41	584.92	559.49	51.1	1,318.77	415.23	903.53	31.5	-174.36	169.7	-344.04
2000	1,338.01	698.61	551.43	52.1	1,587.94	551.43	1,036.51	34.7	-249.93	147.2	-485.08
2001	1,637.1	857.8	779.3	52.4	1,884.4	575.4	1,309.0	30.5	-247.3	282.4	-529.7
2002	1,801.5	1,004.2	797.3	55.7	2,111.3	641.2	1,470.1	30.4	-309.8	363.0	-672.8
2003	2,171.5	1,186.5	985.0	54.6	2,465.0	742.0	1,723.0	30.1	-293.5	444.5	-738.0
2004	2,639.6	1,450.3	1,189.3	54.9	2,848.7	789.4	2,059.3	27.7	-209.0	660.9	-869.9
2005	3,164.9	1,654.9	1,510.1	52.3	3,393.0	877.6	2,515.4	25.9	-228.1	777.3	-1,005.4
2006	3,876.0	2,045.7	1,830.4	52.8	4,042.3	999.1	3,043.1	24.7	-166.3	1,046.5	-1,212.8
2007	5,132.2	2,774.9	2,357.3	54.1	4,978.1	1,144.2	3,833.9	23.0	154.0	1,630.7	-1,476.7
2008	6,133.0	3,268.1	2,865.0	53.3	6,259.3	1,334.4	4,924.8	21.3	-126.2	1,933.6	-2,059.9
2009	6,847.7	3,589.6	3,258.1	52.4	7,587.4	1,528.0	6,059.4	20.1	-739.8	2,061.6	-2,801.3
2010	8,318.03	4,257.05	4,060.98	51.2%	9,318.03	1,822.09	7,495.94	19.6%	-1,000	-800	-200
2011	10,524.00	5,280.62	5,243.39	50.18%	11,374.00	1,940.62	9,433.38	17.06%	-850	-650	-200
2012	11,991.00	5,883.24	6,107.73	49.06%	12,791.00	1,894.90	10,896.10	14.81%	-800	-550	-250
2013	13,029.26	6,117.38	6,911.89	46.95%	14,229.26	2,163.61	12,065.65	15.21%	-1,200	-850	-350
2014	14,134.97	6,549.00	7,585.97	46.33%	15,484.97	2,338.56	13,146.42	15.10%	-1,350	-950	-400
2015	15,530.00	7,023.00	8,507.00	45.22%	17,150.00	2,551.20	14,598.80	14.88%	-1,620	-1,120	-500

Sources: data from 1953 to 2009 taken from the article by Li and Lin (2011); data from 2010 to 2015 from several Chinese Government Reports.

From 1979 to 1993, Chinese government began to borrow limited capital from foreign and domestic markets. In 1994, the Chinese government's deficit almost doubled and the central government had a surplus from 1994 to 2009 while the local government had a significant increase of deficit ever since. This rapid change can at least partly be explained by the 1994 Chinese tax for fee reform (M. Zhang, 2006). In order to deal with the Asian Financial Crisis that happened in 1997, Chinese government followed an expansionary fiscal policy from 1998, and the budget deficits increased sharply in the following years. To cope with the global financial crisis in 2008, Chinese government adopted an expansionary fiscal policy again. In particular, Chinese central government issued a four trillion RMB rescue package in 2008. Thus, the government deficits reached new heights in the following years.

For the Chinese local governments, it is apparent that the debts began to accumulate since 1994 (Table 1). Ever since 1994, Chinese local governments' bottom line has been red ink and at a significant level of deficits. It was estimated that Chinese sub-national government debts increased from about 2.5 trillion RMB in 2004 to about 10.0 trillion RMB at the end of 2009 (Zhao, 2011). Furthermore, including the contingent liabilities, the Chinese local governments' debts were calculated to be more than 23 trillion RMB in early 2015 (Bloomberg, 2015). According to Nicholas Lardy's estimation (in 2004), explicit and contingent government debt combined was about 10 trillion RMB in 2003, an amount equivalent to about 85 percent of gross domestic product in that year. A recent article estimated that China's total debt equals 282% of its GDP, and China's total debt over GDP is higher than some advanced economies such as Australia (274%), United States (269%), Germany (258%), and Canada (247%) (Costa, 2015). Costa's (2015) study cited the McKinsey Global Institute's analysis, which indicates that "rapid growth in lending by local governments, 'many of which may not be able to repay'" (Costa, 2015).

Categories: Conventional and Authoritative

Based on Hana's findings, Shangxi Liu categorized Chinese local government debts into four types according to sources of the debts (Table 2), which are grouped into two dimensions in a 2 × 2 matrix: validity and risk (An, 2002; H. Zhang, 2006; Hu, 2008). Classification yet varies a little bit considering various definitions by scholars.

Table 2

Four Types of Chinese Local Government Debts

Debt		Risk	
		High: direct	Low: contingent
Validity	High: overt	1. government foreign loans 2. treasury bond lending 3. earmarked loans from the central government 4. loans from domestic financial institutions, organizations, and individuals	1. foreign loans guaranteed by local governments 2. domestic loans guaranteed by local governments 3. deficits of society security funds
	Low: covert	1. payments in arrears (including salaries and pensions, construction payments, etc.) 2. expenditure on substandard public goods and service (including education, infrastructure, etc.) 3. society security plans	1. payments for SOE (state-owned enterprise) reform 2. debts unlawfully guaranteed by local governments 3. bad loans of policy financial institutions 4. SOEs' debts after local governments' intervention 5. bad loans and funding gap of local financial institutions

In 2009, the Ministry of Finance in China has requested local governments to register their government debts in three different forms (Table 3), which reflects the extent to which local governments would take the accountability if a certain debt default occurred.

Table 3

Three Forms of Local Government Debts in China

Responsibility of local governments to bear		
High: Category I Debt to pay back	Modest: Category II Liability to guarantee	Low: Category III Obligation to salvage
- local government bonds; higher level government transferring financial debt (foreign lending debt, treasury bond lending, agricultural comprehensive development loans, and other financial lending); - all of investment funds on unproductive public interest (basic) projects be transferred as the debts that must be clearly repaid by the financial funds; - arrears of government units and agencies to institutions or individuals; - debt incurred by the subsidized institutions which has clearly stated that the debt to be repaid by the fiscal funds; - debt that has been borrowed by the China's Local Government Financing Vehicles (LGFV) that also explicitly must be repaid by fiscal funds	- higher level government transferring financial debt (foreign lending debt, treasury bond lending, agricultural comprehensive development loans, and other financial lending); - the debt incurred by investment on gainful competitive projects; government-guaranteed financing platform companies; - direct debt of fund subsidies-institutions and public utility companies; - all the above funds should be deducted from the financial funds to directly repay debt	- debt of fund subsidies institutions (such as universities, hospitals, etc.) for the public good (basic) projects borrowing; - utilities companies for the public good (basic) projects (water supply, heating, gas, sewage treatment, and garbage disposal, and so forth) borrowing; - financing platform companies for the public good (basic) projects in construction borrowing; - these are the unacknowledged government assuming direct responsibilities for repayment, nor debt security provided (excluding the higher level government transferring the financial debt); - the debts incurred from providing debt guaranteed by the fund subsidies institutions, utilities companies, and financing platform companies for the public good (basic) project constructions (excluding the direct debt reflected by the guarantee)

The Chinese government most recently defines the local government debts in terms of the second criteria. With regard to credibility of the official statistics, this paper supports the general view: maybe untrusted but valid. Moreover, during those interviews either officials or scholars give tacit consent to the authoritative category, on which this research is also based accordingly.

The Importance and Unique Contribution of This Study

Many scholars and students in China have tried to do research on the topic of Chinese local government debts. For example, Dr. Xie's (2013) doctoral thesis is "The Research of Local Government Debts of China" in which Dr. Xie mentioned that reducing the local government debts can effectively avoid the local government debt risk and is conducive for Chinese economic development in a stable and healthy manner (Xie, 2013). Dr. Hu's (2008) doctoral thesis is "Early Warning and Control on Regional Government Debt Crisis" (Hu, 2008). Dr. Hu (2008) felt that local government debts have a great impact on the implementation of local government budget as well as on the societal stability and maintaining normal national economic and social order (Hu, 2008). In Dr. Huang's (2007) doctoral dissertation "Research on Chinese Local Government Debt Management", she stated that such research has the importance of preventing its potential disruptive behavior toward the Chinese economic development, clarifying the relationship between the government and market boundary as well as improving government transparent. Lin (2011) illustrated the importance of government debts on the national credit as well as rationalizing the division of central and sub-national government in terms of who is in charge of what. In international realm, the Detroit's bankruptcy has taught a lesson to other local governments in the United States of America. The Greek crisis beginning in late 2009 has worried many European countries. In such a global environment, this study is all the more important.

The unique contribution of this study is its holistic approach to address Chinese local government debts. In particular, the research intends to find out the root causes of the local government debt increasing and tries to find out solutions, such as reconstructing of the separate market and government responsibility, putting individual accountability for increasing local government debts in the future as well as establishing a local government debt management organization in the Chinese central government and so forth. The authors believe that these approaches will effectively curtain the growth impulse of local government debts and thus provide strategic solutions to the so far uncontrollable dramatic increasing of Chinese local government debts.

Research Methods

Research Questions

Research question one: What is the size of the Chinese local government debts?

In the first part of literature, this paper has cited some sources of the Chinese local government debts which are official. This research also wishes to collect more insights if this study can conduct empirical studies and to have a better estimation of the size of the Chinese local government debts.

Research question two: Are Chinese local government debts controllable?

Because of the alarming size and rapid increase of the Chinese local government debts even from the official sources in recent decade, it is a great concern whether Chinese local government debts are as uncontrollable as a wild horse without bridle, or if Chinese government has means to cope with it.

Research question three: Who or what caused the rapid increase of the Chinese local government debts?

The causes of the rapid increase of the Chinese local government debts especially in the past two decades or so are of great interests to the researchers. If this study can identify the major causes of whom or what is responsible for the sudden burst of the local debts, the government or the academic community probably has clues of how to solve the problem.

Research question four: Is it possible to have individual accountability for increasing local government debts in the future?

Since the large size and sudden increase of the local government debts are worrisome to many stakeholders, it is natural to consider whether it is possible to hold someone responsible for the increase of the local government debts in the future. If the central government can hold someone responsible for the increase of the local government debts, then it is likely the relevant officials will be more cautious when making decisions of increasing local debts. Therefore, the local government debts will not increase so fast.

Research question five: Will it be helpful to create a local government debt management organization in the Chinese central government?

If the answer is "Yes", where should this new organization be located? What are its major responsibilities?

Research Methodology

For this study, the researchers have read a number of scholarly papers in Chinese, including doctoral dissertations and master's degree theses. The researchers have also read some essays and papers in English. However, as an empirical study, the researchers have adopted the interview methodology with structured questions.

The researchers believe that the most informed people on the ground are Chinese local government leaders such as the town chief, county chief, or people who are in charge of local debts in the financial bureaus in different government levels such as county, prefecture city, and province. Through the researchers' connections,

the researchers have interviewed eight government officials including three town chiefs, two county chiefs, two provincial level financial bureau leaders, and one policy analyst as well as one financial company CEO and five scholars from premier Chinese universities (the researchers believe that they are experts in Chinese local government debts) from May to June of 2015. These government officials are scattered in economically developed local governments as well as in less economically advanced local governments in China. Their opinions and views are extremely important to address the researchers' research questions and shape the researchers' policy recommendations.

Research Results

In this section, the researchers present the findings from the researchers' interviews with the officials and scholars targeted at the researchers' five research questions.

For research question one: What is the size of the Chinese local government debts?

The answers vary a lot. Overall, the government officials are much more cautious in terms of the size of the Chinese local government debts beyond the total of 16 trillion RMB by the end of 2014. Some indicate that the official-owned data of local government debts may be relatively small and not all-inclusive.

"Local governments are not likely to report all of their debts."

"There is hardly a precise and integrated database nationwide, but some rough general data."

"The real number can be somewhat larger, especially the contingent debt or the debt of Category III, mainly because of under-reporting of local governments."

Others claim that the data have already been collected at central government's command generally.

"The financial-related departments shall have the data, and the central government is able to get access to the data."

"It can be reckoned from the data of the central bank. However, it may be hard to tell local government debts from local SOEs' debts."

"In general, the reported number is not smaller than the real number. But there is a diversion of the debts of Category I into the other two types of debts."

For research question two: Are Chinese local government debts controllable?

Most respondents believe that the size of the overall Chinese local debts is controllable. They believe that the Chinese government has huge resources to repay the debts with the sale of (or renting out) land or assets of SOEs.

"The debt is controllable indeed through a lens of balance sheet. The Chinese government possesses a large amount of assets legally, either tangible or intangible."

"An extensive debt crisis is not likely to happen."

"The public revenue from property sector can cover the repayment of debt's interest—the cost of government debt is relatively low."

"Local government debts are mainly used for public goods and service, not for business. And therefore risks do not exist."

"Most of local government debts are domestic, and there is a strong support from the central government."

However, most interviewees worry about some risks in particular areas or localities.

"The mismatch of debt maturity leads to some short-term liquidity risk, though in a long run it may be healthy."

"Some risks emerge at the grassroots level, albeit healthy provincial finances."

"In some less developed localities, public revenue from property sector is very limited. Given a big scale of debt, they are under massive pressure to repay the debt."

"Two risks veil the local government debts: elusiveness and expansion, which are getting concentrated in areas with lower solvency, such as some areas in west China."

"The risks in particular areas are controlled with current policies. In an objective sense, many resources could be used to deal with these risks. But they are deliberately prohibited by the central government, who intends to make small-scale debt default so as to heed a warning."

Still, one official considers the risk of local government debt as widespread.

"The risk exists across the country, since the development mode (borrowing to develop) is all the same. The less developed areas may have even smaller risks instead due to inability to borrow."

For research question three: Who or what caused the rapid increase of the Chinese local government debts?

There are several perspectives for the rapid increase of the Chinese local government debts in recent decades.

It is widely believed that the official promotion mechanism is a key to the local debt burst. Official promotion is substantively linked to the economic performance of the region. Government officials have strong incentives to borrow money to boost the GDP, which helps their further promotions, while the debt problem would be left for the next term of the administration.

"The problem is partly owing to the official performance evaluation mechanism that counts on top-down inspections."

"It is associated with the achievement view of officials."

"Local officials demand promotion, with a strong desire to build more short-run achievements during a five-year term in office."

"The degree of official impulse is related to the official rank. The officials in counties to a largest extent desire achievements because of their age and needs of promotion."

"When the risks emerge, the officials probably just left office."

Economic development in general and infrastructure construction in particular seem to be a common reason for the rapid accumulation of local debts.

"The economic development oversteps the law of the market. Local governments stress infrastructures, but ignore industries."

"Local governments construct a great number of industry parks, but some then cannot attract business and investment as expected. Therefore, the governmental investment in infrastructures tends to be hard to return, which causes the problem of debts."

"Some local governments jump to planning without sufficient investigations, out of tune with urbanization development."

Many respondents argue that central government's policies and attitude may partly account for rapid expansion of local governmental debts.

"Compared with the local governments, the central government shall be largely blamed to the problem of local governmental debts for its acquiescence and negative attitude. During the 2008 crisis, the central government even stimulates the local governments to borrow money via sorts of channels."

"It is the central government's requirement in 2008 and 2009. Moral hazard occurs because the central government bears some of the burden."

"The financial policy made by the central government exerts great pressure on the local governments, leading to the debts."

"During the 2008 crisis, the central government just required local governments' investment. It did not demand return and payback then."

"Before the crisis, it is the government that asks banks for lending; however during the crisis, it is bank that asks the government for borrowing."

"The recent pressure of repayment is related to the then four-trillion strategy."

Some share the view that the growth of local governmental debts is resulted from the slower and slower economic growth.

"When the economic growth becomes slowing down, government's revenue growth decreases concurrently. However government's expenditure features heavily in rigidity. Non-profit programs are related to employment, and public investments to economic growth, neither of which can be cut off."

"The key problem is of fiscal balance."

Some interviewees pointed out the 1994 tax for fee reform, which increased the expenditure responsibility of local governments while decreasing the capacity of levying the tax revenue.

"A majority of taxes, about 70%, are paid to the central government, while the local governments have to deal with most of investment to infrastructure. The unreasonable allocation between the central and the local leads to this problem."

"The 1994 reform left power and capacity mismatched."

"Local governments lack financial resources after the 1994 reform."

"The power-capacity mismatch catalyzed the problem of local government debts indeed. The top-down intergovernmental transfer payment intensifies the mismatch in part, given the *hukou* system. The migrant population is provided with the public service in the locality of destination, while the transfer is paid to the government of original *hukou* domicile (registered place of residence), leading to payment imbalance."

LGFVs are widely regarded as a way of local governmental financing, not a reason for local governmental debts.

"The business of LGFVs is forced. They have not choices. They are controlled."

"LGFVs act just as instruments for financing."

"More than 80 percent of LGFVs' business is for governmental financing, mainly to non-profit programs."

"LGFVs carry a risk of the local governmental debts: uncertainty."

None of the respondents agrees on the idea that the problem of local governmental debts is, even in part, owing to public general expenditure to civil servants.

"As a matter of fact the general budget is in short. However, the number is not that large to explain the growth of local governmental debts."

"The salary to civil servants is guaranteed nationwide. In the poverty localities, there is transfer payment from the central government. The budget is able to cover the general expenditure for certain."

"With a comparison between our administrative function and the number of civil servants, Chinese government is a relatively small government to some extent. The percentage of general expenditure to civil servants to the overall government expenditure is not very high."

"No local government in China maintains general operation via debts."

"All of local governmental debts are earmarked. The local governments dare not to embezzle."

"The money from debts cannot flow to the account of salary to civil servants."

For research question four: Is it possible to have individual accountability for increasing local government debts in the future?

Almost all of the respondents declare that the local government officials should be blamed to a degree. Debt issue should be a factor in performance evaluation.

"The performance evaluation mechanism needs adjusting if we are willing to tackle the problem of local governmental debts thoroughly."

"It is necessary to investigate and ascertain the accountability."

"The investigation of accountability can take effect of supervision, as well as deterrence."

"The investigation is to warn the local officials to pay further attention to the government's debts."

Some interviewees talk about the criteria of officials' accountability of debts.

"Off-office auditing should be emphasized, both on efficiency of debts and on rationale of debts."

"The accountability depends on the scale of debts. The rationale should be well-explained, and consistent with requirements of the central government."

Some respondents point out that only the officials in office are to be investigated.

"Only the officials in office, not the former, will be blamed."

"As for the debt already issued before, we investigate the responsibility of debt managers, not the accountability of debt issuers."

Some respondents believe that in practice, it will be very difficult if it is not impossible to hold individual officials to be responsible for the debt increase.

"The accountability of the debt to develop local economy is unlikely to be traced."

"Off-office auditing is to strengthen political awareness. Today the objective has already achieved."

"It is to assure the economy to a soft landing that the central government considers debt management as a factor of performance evaluation. Development is still the top priority."

Nevertheless, one respondent worries that accountability cannot solve the underlying problem.

"Accountability is very easy to avoid when the officials take advantage of SOEs."

For research question five: Will it be helpful to create a local government debt management organization in the Chinese central government?

The responses are negative. Every interviewee hardly believes that it cannot do with the existing problem of local governmental debts to establish a debt management department or agency under the State Council (the Chinese central government).

"The imaginary new agency does not have as much authority as the Ministry of Finance to supervise local officials."

"The debt management department's function is very limited. The number of professional staff might increase. However its authority must be less than the Ministry of Finance. The Ministry of Finance can make use of its unique resources to negotiate with other departments and agencies."

"Such institutional reforms of the State Council may have some beneficial effect on supervision, but it is not at the top of a list."

Analysis and Discussion

The issue of Chinese local government debts is an important yet sensitive topic in China. On the one hand, various levels of Chinese local governments need financial resources for a wide range of purposes. On the other hand, the seemingly uncontrollably large increase of local government debts has garnered spotlights from government officials, scholars, investors, and the media alike. The researchers' investigation of this issue has led the researchers to propose some suggestions in order to either solve or at least contain the rapid increase of the local government debts.

Five recommendations:

First, the researchers recommend drawing a clear line of demarcation between the government and the market.

If the researchers study the compositions of the local government debts carefully, it is not difficult to find out that the major sources of the local debts are derived from economic activities. If the government behaves ideally following the market mechanism, many of the debts should not be generated in the first place. However, as the researchers know, not long after the establishment of the People's Republic of China (PRC) in 1949, PRC followed suit of the former Soviet Union and adopted a command economy. In such a system, the majority of economic activities belong to the State-owned Enterprises and the free market is marginal. Since 1978, the whole country was re-oriented to economic development. In 1992, the central government announced that the PRC was in the primary stage of socialism and China should build socialist market economy with Chinese characteristics. Even in the political and administrative arenas, China has conducted seven rounds of administrative reforms ever since 1978 (1982, 1988, 1993, 1998, 2003, 2008, and 2013). Those administrative reforms have aimed at the transition of the government functions (Straussman & Zhang, 2001; M. Zhang, 2006). So far, the administrative reforms in China are far from completed. Changing the value, idea, function, and procedure of the government (officials) is a long-term goal. Commentators can easily find out that the Chinese government nowadays still intervenes the market behavior heavily. Thus, drawing a clear line of demarcation between the government and the market is still a long journey. Nevertheless, if government can clarify and faithfully respect the borderline between itself and the market, the debt increase will shrink largely.

From a systemic point of view, the Chinese society has been in transition from previous socialist command economy to the primary stage of socialist market economy (the milestone year was in 1992). Even nowadays, the boundary between the government and the market is not quite clear, which has caused a number of problems. Some provide the argument that the government gets involved with the market that increases the government expenditure, leading to an expansive scale of governmental debt given constant revenues (Guo, 2001; An, 2002). This paper does not focus on why and how to constrict the government's involvement with the market. However more important, the legislation of the boundary between Chinese government and the market cannot be found, or does not exist at all. The first step is to set forth demarcation of the government's lawful intervention into the market, which underlies the second suggestion. Unless this could come true, the power within the government would no longer become clarified, given an ambiguous power of the government as a whole.

Second, the researchers recommend reforming the current tax sharing mechanism between the central and local governments.

The researchers' studies have revealed that the 1994 tax for fee reform has largely increased the proportion of central government's fiscal revenue (M. Zhang, 2006), while decreased its fiscal responsibilities gradually. As a result of the 1994 reform, the central share of tax revenue jumped from 22 percent in 1993 to 55.7 percent in the following year (World Bank, 2002; also see Table 1). The result is that local government's revenue decreased while local government's expenditure increased. The increase gap of low revenues and high expenditure has pushed the local governments to take on increasing debts to balance their budgets. Still the centralization of capacity to the central government can relieve the economic inequality among different districts; the decentralization of power to local governments may improve the efficiency of public service provision. The intergovernmental imbalanced power-capacity relationship shall be settled by transfer payment (Lei, 2012).

As the tax resources get centralized into the central government, intergovernmental transfer payment increases correspondingly. A roughly 70 percent of the central government's revenue is transferred downwards to local governments (Anonymity, 2014). The transferring financial debt can also be regarded as a particular kind of central government transfer payment to local governments. But intergovernmental transfer payment is born with inevitable demerits regarding transparency, efficiency, and consistency (Gu, 2006). In view of incrementalism, the transfer does not take into account the financial balance gulf in different localities (Lei, 2012). The special (*zhuanxiang*) transfer payment of earmarked funds compels local governments to raise most of the funds, which is termed "central government's power over local government's capacity (*zhongyang chu zhengce, difang chu zijin*)".

It is time for the central government to reform its current practice of revenue sharing with the local governments. Any further behavior of wherein the "central government hosts a banquet while local governments pay the bill" should be very viewed with extreme caution. This is like the unfunded mandate in the USA, which is unpopular among the sub-national governments.

All in all, the problem of local governmental debts is uncertainty and arbitrariness of the power of local governments, and by extension too much central government's intervention of excessive tasks to local governments. The power-capacity reform shall live up to the expectation of rebalance. The legitimized allocation of power between the central government and local governments should be prioritized, and then the adjustment of governmental revenue system. China has already proposed to "appropriately increase the authority of office and responsibility of expenditure of the central government" and to "maintain the overall stability of the current financial pattern of the central and local governments". "The central government can delegate some expenditure responsibilities to local governments through transfer payments" (Anonymity, 2014).

Third, this research recommends holding the relevant officials responsible for the illegal increase of the local government debts.

Unlike in western countries where the citizens elect the top politicians in every level of government, Chinese leaders are appointed or selected by the higher level Chinese Communist Party (CCP) organizations. The Chinese Communist Party can easily promote or demote or even fire its government officials. This systematic difference between China and western democratic countries results in quite different motivation between Chinese leaders/officials and the western politicians. The western politicians have to be responsible for their constituency, while Chinese leaders/officials have to be responsible for the higher level Chinese Communist Party.

In the past, more than three decades, China has adopted a grand policy of reform and opening to the outside, and focused on economic development. Therefore, an important indicator of government officials' performance is GDP growth. Gradually, local government officials have "found" that borrowing money to drive economic development is a very effective way to stimulate GDP growth, while individual officials do not need to be responsible for the sudden large increase of the government debts. As for the evaluation of the grass root bureaucrats, Huang (2014) has conducted case studies in which he identifies 54% of a performance measurement is related to economic activities. Many government leaders/officials have been promoted to the higher level of governments and the large debt increase has to be left for the next term of the administration to deal with. If the impulse of borrowing money to stimulate the economy is not contained, the large increase of local government debts cannot be stopped. In these empirical studies, the researchers have asked the interviewees to share their opinion on whether it is possible to hold some officials responsible for the local government debts. It was surprising to discover that all respondents who answered this question believe that it is difficult if it is not impossible to hold relevant government officials responsible for the increase of the local debts. Nevertheless, the researchers perceive that it is both necessary and possible to devise a system/mechanism to hold relevant government officials' (especially the top leaders of every level of governments) responsibility if the local governments under their domain have large and sudden large increases of the debts. If this accountability mechanism can be tracked to a life-long process, the motivation of borrowing money to boost the local economy can be controlled. To do so, the corresponding level of the People's Congress should pass relevant laws and the Chinese Communist Party Organizations should also issue relevant regulations. It is plausible that local government officials may have an incentive to say that they do not want oversight. Thus their views on this matter should not necessarily be surprising if motivated reasoning is involved.

Fourth, the researchers recommend establishing an organization in the central government to manage the Chinese local government debts.

By June of 2013, Chinese local government debts had reached more than 10 trillion RMB. Though Chinese central government leaders from time to time have announced that the central government would not take care of the local government debts problem if the locality cannot repay the debt in the end, the respondents and the researchers believe that this is not a credible threat: if the local government debts cannot be repaid, the central government will bail them out. China is a politically unitary country. The simple truth is that the central government cannot ignore the problem of the local government. As some respondents argue that central government's policies and attitude should take part in the responsibility of the current dilemma of local governmental debts. As early as the beginning of the 21st century, the idea of a unified debt management department within the State Council has already been put forward (Guo, 2001). Considering the limitation of establishing an independent ministerial agency, the researchers propose that the central government should establish an organization to manage the Chinese local government debts. This organization should be ideally located within the Ministry of Finance as a specific bureau such as local debt bureau. The major function of this bureau is to approve the annual debt quota of each province, monitor the debt variation of each province, and propose regulations of debt related policies (to be approved by the National People's Congress).

Conclusions

From Table 1, it can be seen that the Chinese government debts began to accumulate in the 1980s and the

Chinese local government debts started to have a sudden increase from 1994 largely attributed to the 1994 tax for fee reform. By the end of 2004, the Chinese local government debt reached 2.5 trillion RMB. More worrisomely, the researchers see a rapid increase of local debts in the past decade from 2.5 trillion RMB in the end of 2004 to more than 23 trillion RMB in the end of 2014. It is almost impossible to grasp the true picture of the local government debt in the whole country. Nevertheless, the researchers are afraid that this debt issue might burst in the foreseeable future. While borrowing money has been playing an important role in stimulating the local economy, there are a number of negative impacts to the country.

Huge amount of local debts have influences on the Chinese macro economy, on banks who have lent money to the local governments, on overall Chinese government authority and reputation, to international investment, and on social stability (Xie, 2013; Lin, 2011). There are increasing promising risks that some local governments cannot repay the debts or the interest of the debt. If some local government breaking contracts or cannot keep their promises to pay the debt or the interests on time to the borrowers, it could be disastrous, leading to large scale demonstrations and social instability.

According to this research, the greatest problem is that most government officials and scholars have not realized that the Chinese local government debt is an imminent issue that needs to be taken care of immediately. If the Chinese government does not curtail this dangerous trend of taking on debt for various purposes over the next a few years, the situation may spiral out of control. The researchers can identify the following root causes and potential solutions for Chinese local government debts. First, as China has tried to redefine the government functions in the stage of socialist market economy with Chinese characteristics, the ongoing adjustment of the functions between government and the market needs to have an explicit borderline. Thus, the government should no longer intervene in the areas which belong to the competitive market. Second, the 1994 tax for fee reform needs to be re-examined and further adjustment is necessary to distribute the local government higher percentage of revenue sharing. Third, the Chinese Communist Party (CCP) and government should stipulate relevant rules or regulations to promote or demote CCP or government leaders/official associated with the local debt level. The researchers believe that the new mechanism will effectively reduce the motivation of irresponsible money borrowing. Fourth, the researchers believe that an organization in the central government is necessary to manage the local debts. Its function should focus on approving, monitoring, and proposing relevant rules and regulations and managing the local debts. Right now, no such organization is in charge of the Chinese local government debts, and even the size and scale of the local government debts is a mystery. If the Chinese CCP and government can adopt the above four approaches, the researchers are optimistic that the Chinese (local) debt problems will be solved.

The Chinese central government has paid great attention to the issue of its local government debts. For example, since 2013 tens of regulations have been issued such as "National Governmental Debts Auditing Result (2013)", "PRC Budget Law" (amendment passed in August 2014), "Opinions on the Strengthening of Government Debt Management by the State Council (2014)", and "Tentative Measures of Local Government Issuing General Bonds (2015)". Whether these regulations will be effective to suppress the dramatically increase of local debts is uncertain.

This study focused more on grand strategy and guidelines to target at the rapid increase of the Chinese local government debts in recent decades. Detailed steps and measures are needed to implement these strategies.

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Profitability Prediction Model for NPD Projects Under Risk[*]

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Only a few successful new product development (NPD) projects are continuously supported by the firm when they are expected to assure profitability in the market. The profitability of a project is measured as profit ratio (PR), the profit is divided by the cost. The profit figure is changed depending on either internal risks or uncertainties occurring externally. More risks require higher response costs to them and uncontrollable uncertainties affect NPD projects either positively or negatively. In this study, a PR model is developed to predict the profitability of a project at a given time. The model minimizes the response cost computed under two extreme response strategies, such as "Avoid" and "Acceptance" for the internal threats. Also, the model reflects the sales volume changes due to external uncertainties. The linear programming (LP) method determines the optimal probability of the response strategy under three scenarios of defining the relationship between risk avoidance and risk acceptance. It can be utilized to make a GO/NOGO decision on the project based on the prediction results at any gate of the NPD process. The solving procedure is provided to apply the developed model for real cases.

Keywords: NPD, risk assessment, response costs, profit ratio model, profitability prediction, GO/NOGO decision making

Introduction

A firm can attain competitive advantage and survival from tough competition in a rapidly changing market environment through successful NPD efforts that promise high return or profit. It is reported that 42% of sales volume and 38% of profits have been generated by successful NPD efforts in the top 20% of 105 US corporations (Cooper, 2004). A new product can substitute for an existing product on the decline, in terms of sales volume, profit, and technology. However, all NPD projects are not successful due to a lower profit rate than expected. Nevertheless, a large amount of resources and efforts are put into them under serious uncertainty. Numerous projects have failed due to unsolvable or unexpected risks and inefficient project management, or insensible changes of both the internal and external environment of firms (Cooper, 1999). Other important reasons for project failures include lack of budget, government regulation change, market segmentation, economic shift, rapid technology change, capricious customer needs, and short product life cycle. Therefore, a

firm should develop a more scientific and logical decision making process to select the right projects at the right time to decide GO/NOGO of a project at the gates of the NPD process, and to allocate superior resources to it. Rubenstein, Chakrabarti, O'Keefe, Souder, and Young (1976) presented that a firm with an outstanding decision making process has a higher success rate for NPD based on analyzing 54 NPD projects.

A firm should manage NPD projects effectively and efficiently to ensure their success through the right decision making process with precise decision criteria. A critical criterion is the earnings or profit figure generated from successful market launch of a NPD project. If a project manager can estimate the amount of profit to be expected at any time of the NPD procedure, he/she can decide the life of the project, i.e. GO/NOGO decision on the project. The profit is determined by sales volume in money value minus project costs. A firm would invest more resources, including superior experts, in terms of technology, finance, and management to the projects expecting high profit.

The NPD process typically consists of six phases or stages, such as planning or requirement analysis, conceptual design, system-level design, detailed design, test and simulation, and production ramp-up. Each phase has many subsequent functions or activities. Examples of the functions are customer's requirements analysis, design guidelines development, evaluation of design to cost, producibility measurement, manufacturing procedure determination, etc. More importantly, there are gates between phases to evaluate the project performance at the end of a phase. The project manager should decide which project is to be continued or terminated at each gate based on its performance. The performance figure is changing due to various risks occurring in phases. Examples of the risks are market change, product complexity, resource tightness, technical risk, government regulation, and interest rate. A firm should respond to the risks appropriately to minimize the impact on the project. Various strategies to respond against risks are available, depending on risk types, such as internal and external (Li, Akintoye, Edwards, & Hardcastle, 2004) and risk impact, such as threat and opportunity (Hillson, 2001). Risk acceptance, risk avoidance, risk reduction, and risk transfer are appropriate for dealing with threats, while "exploit", "share", "enhance", and "ignore" are new strategies proposed to respond to identified opportunities. However, effective or efficient responses lead to increasing project costs, especially for threats, no matter which strategy is adopted (Barton & Bobst, 1988; Murmann, 1994; Walid & Oya, 1996).

The project manager should control NPD projects through not only experience, but also a scientific and logical risk management plan. If the plan is optimized quantitatively, the manager can control the NPD projects consistently. This study suggests a quantitative profit ratio (PR) prediction model by which the GO/NOGO decision on a project can be made at each gate. The model can predict the profit to be expected at the production ramp-up stage where both internal and external risks may impact as threats. If a project proceeds to the production ramp-up stage successfully, i.e. passing all previous gates of the NPD process, the new products presumed by the project are produced and sold in targeted markets. All expenses paid for the project survival should be recovered by sales volume in money. The major costs include fixed and variable cost, and response costs invested in treating all types of risks, especially for threats. In this study, the risks are treated by two response strategies, risk avoidance and risk acceptance. The developed PR model consists of these costs that are minimized by the optimized response strategies, and considers sales volume changes impacted by external risks. A project predicted to generate a high profit ratio at a certain gate should pass the corresponding gate and be continuously supported by the firm till its next gate.

After the introduction, the remainder of the paper is structured as follows: Relevant previous research related to risks in NPD, risk degree measurement, and types of responses against risks are presented in section 2.

The profitability prediction framework and the application steps of the framework for real cases are described in section 3. In section 4, conclusion and discussion including the limitations of the model are remarked.

Related Work

Many risks either positively or negatively affect the success of NPD projects in terms of customer's satisfaction, financial measures, firm's reputation, and product excellence. The risks can be either threats or opportunities, depending on occurrence time and project progress. For example, a risk, such as money exchange rate fluctuation during the NPD process, will be carefully evaluated to decide its impact on a project, as being sensitive or not. However, all types of risk need expenses for a firm's response. These affect the expected profit to be earned from the project.

Risks can be classified into two groups: internal and external. The internal group contains the risks related to difficulties from features of the project itself and project management. The typical feature of the group is the project complexity caused by task, forecasting, communication, and teamwork that influences project speed and performance (Kim & Wilemon, 2003). The difficulties of project management come from technical risks in the areas of design, test, production, facilities, and management, as other examples of internal risk. Technical risk is a measure of the level of uncertainty for all technical aspects of the NPD process (Polk, Plank, & Reid, 1996; Priest & Sanchez, 2001). Product innovativeness, design uniqueness, and project structure are also affected by internal risks (Ernst, 2002; Song & Montoya-Weiss, 1998). The external risk group can be characterized by three features: dynamism, hostility, and heterogeneity (Park, Kim, Lee, & Choi, 2011). Dynamism means that risks are not anticipatable and unstable due to their frequent occurrence, like customer's need changes and competitors's strategy. The risks related to hostility occur due to competitors' growth speed or decline in economic activity. The heterogeneity of risks is characterized by unfamiliar circumstances, such as new production technology, markets, and customers. The smooth flow of the NPD process and its management are hindered by the unpredictable external risks. Then, NPD projects and related activities require more resources than expected and need a better management system.

The risk degree is a measure by which the amount of impact is estimated for a risk to either positively or negatively affect the success of NPD projects. The success of a NPD project can be measured by different aspects, such as customer, finance, firm itself, and product (Griffin & Page, 1993). Also, other aspects in management can be involved (C. S. Kim, J. S. Kim, Lee, & Choi, 2013). The financial aspect is the most critical if a firm wants to profit from the successful launch of new products to market. For this reason, development of quantitative models to measure the risk degree and to predict expected profit from a project is important to evaluate the project future or project life. In general, both more time and higher cost should be invested to a project to be successful, when more risks occur more frequently. If suitable responses are not available against risks, the project can be delayed or fail. Therefore, it is necessary for a project manager to measure the risk degree and profit scientifically and quantitatively.

The DEA (Data Envelopment Analysis) and AHP (Analytical Hierarchy Processing) have been known as methods to evaluate the risk (Wang, Liu, & Taha, 2008; Bae & Lee, 2011). Especially, Bae and Lee (2011) suggested the IDEA (Imprecise Data Envelopment Analysis) method to develop risk management process, which transforms the imprecise data so that it can be used to represent risk. Choi and Ahn (2010) introduced a framework in which the risk degree can be measured through a fuzzy process and stochastic process, and integrated risk degree was determined for all risks occurring in a NPD project. Song, Ming, and Xu (2013)

proposed quantitative methods to evaluate risk factors in customer's integration for NPD. They used rough set theory and group AHP approach to develop a risk evaluation framework without requiring prior information by which subjectivity and vagueness of judgement under uncertain environment. However, their methods focus on only risks related to customer's integration without considerations of all possible risks occurred in NPD stages. Park et al. (2011) compared the risk degrees measured by fuzzy process and Grey system theory (Deng, 1985). H. G. Choi and D. Choi (2012) classified the risks into phases or stages of the NPD process, measured the risk degrees by each phase and integrated them for the entire NPD process, and selected optimal responses to risks using linear programming models. Their studies did not consider either threats or opportunities for each risk to be dependent on occurrence time and current status of a project. Especially, they did not consider success measures to evaluate the project. In general, the success of a project is decided by expected profit to be earned from a given market. If the profit size can be estimated or predicted at each phase or stage of the NPD process for a project, the project manager can reallocate critical resources to it, and furthermore, he/she can make a decision for it to be continued or stopped. Since a risk affects a project in terms of both response cost to be paid for mitigating its impact and project schedule, the profit could be reduced.

The risk degree should be reduced by the most appropriate responses against an identified risk. The manager is responsible for implementing the responses and for monitoring them effectively. Risk responses are usually grouped into four strategies according to their intended effect on the risk being treated (Hillson, 1999): "Avoid", "Transfer", "Mitigate", and "Accept". These strategies are appropriate for dealing with threats. "Avoid" is the strategy to make risk occurrence probability zero or to make the risk impact zero. This strategy can recommend different ways to project manager to perform the project. "Transfer" strategy identifies another stakeholder better able to manage the risk, to which the liability and responsibility for action can be passed. The strategy "Mitigate" reduces the impact of the risk to make it more acceptable to the project or organization. Finally, "Accept" strategy recognizes residual risks and responses either actively by allocating appropriate contingency, or passively doing nothing except monitoring the status of the risk. However, new strategies should be also developed to deal with opportunities, because no project manager would wish to "Avoid" an opportunity, or "Mitigate" its probability and/or impact. They are "Exploit", "Share", "Enhance", and "Ignore". These can be derived from the threat strategies by generalizing the approach taken for threats to make it suitable for opportunities. It is noted that the effective and efficient responses against threats lead to increasing the project costs and affect the profit. This study focuses only on the risks threatening the success of a project.

Although plentiful researches are available to measure the profit in finance fields, such as the stock market and money exchange, few studies handle the profit models to evaluate NPD projects. Also, there are few researches to predict possible profits for a given NPD project performing at its current stage on the basis of quantitative risk management model. This study develops the profit model to predict the expected earnings from a project at any gate of the NPD process and helps project managers to make decision on the project life at a given stage.

PR Prediction Framework

Cooper (2008) presented the stage-gate model for the NPD process. He showed six stages: idea, scoping, business case, development, testing, and launch. Similarly, Priest and Sanchez (2001) presented five stages: requirements definition, conceptual design, detailed design, test and evaluation, and production and sustaining engineering. Each stage has specific functions or activities to be adapted for design, test, and production. There

are gates located between two stages to evaluate and maker GO/NOGO decision for a project, as shown in Figure 1. A project has been successful at a given stage in terms of quality, cost, product function, technical risks, etc. if it is expected to make a high profit after entrance to the market. The project must be continuously supported to perform related functions in the next stage.

Hypotheses

The profit ratio is defined by profit to cost; profit is determined by income minus cost. In this study, total expenses paid till the current gate are the sum of the cost for team operations, prototype testing and simulation, new technology adaptation, equipment, labor, material, overhead, responding against various risks, etc. The ratio is predicted at the current gate with an assumption that a project would enter successfully into the production ramp-up stage (Stage 5). If the predicted ratio is greater than 1, the corresponding project can be a GO candidate that proceeds to the next development stage.

Some critical assumptions established to develop the profit ratio model are as follows:

• The project manager can provide all necessary cost information on the basis of historical data and experience obtained from the previous NPD projects. The cost information is classified into three groups: fixed cost, variable cost, and response cost in this study. These cost groups can be classified further into either critical or non-critical costs by specifying the priorities given for managing, operating, and controlling them. This study requires all cost information regardless of the priorities to estimate the project cost (TRC).

• Internal risks affect total expenses, while external risks influence sales volume in Stage 5.

• All risks occurring in a stage must be handled and resolved by appropriate responses before entering the next stage. That is, four strategies can be considered only for threats: "Avoid", "Transfer", "Mitigate", and "Accept". It is noted that the strategy "Avoid" is the antipodes of the strategy "Accept" in terms of response cost. "Avoid" takes relatively the largest cost while "Accept" requires the least cost. Also, the former expects no project delays and the latter does not. The costs for other strategies, "Transfer" and "Mitigate", can be prorated on the basis of the costs for "Avoid" and "Accept". Furthermore, the internal risks are responded by these two strategies while the external risks are treated by "Accept" and monitoring the risk impact changes, especially the sales volume changes in the production stage.

• Using historical data, the project manager can induce probability density functions of risk occurrences for a risk.

• Market price is estimated using total cost invested in a project and profit margin.

• Time value of money is ignored: interest rate and inflation rate are not considered.

Risk Assessment Model

Either internal or external risks affect project success with unequal penalties. Therefore, effective or efficient responses against risks are necessary to reduce the impact of risks. However, the responses require the investment of resources, such as cost, time, technology, and people, especially for threats. All kinds of resources can be converted into monetary value that is utilized for developing the PR model in this study. Only the cost and time are considered in this study to calculate the profit to be expected from a given project at a development stage.

Nomenclature. The following notation and functions are used to develop the PR model:

x = time point of the last gate ($i = 5$) located just before Stage 5 (Production), as shown in Figure 1. The design maturity of a project is finally decided at this point.

t = a certain time point of the NPD process ($0 \leq t \leq x$)

t_s = a time point at which a new product as the outcome of a NPD project is on sale. That is, a certain time point of Stage 5 in which production ramp-up is performed [$0 \leq t_s \leq$ min (one year, EOL)]. EOL is the end of product life.

$i = i^{th}$ gate ($i = 2, 3, 4, 5$).

$z = z^{th}$ stage ($z = 1, 2, 3, 4$).

D_z = the initially scheduled time length of zth stage.

$r_{zj} = j^{th}$ internal risk in z^{th} stage.

$\lambda_{zj} = j^{th}$ risk occurrence rate in z^{th} stage.

ϕ_{zj} = probability of avoiding j^{th} risk occurring in z^{th} stage. ($1 - \phi_{zj}$) is the probability of accepting the risk.

$X_{zj}(t)$ = response cost paid for j^{th} risk at time t within z^{th} stage through risk avoidance.

$Y_{zj}(t)$ = length of time delay due to risk acceptance for j^{th} risk at time t within z^{th} stage.

d_z = actual time length of zth stage = $D_z + \sum_{\forall j}(1 - \phi_{zj})Y_{zj}(t)$.

$UC_z(t)$ = unit delay cost paid due to risk acceptance at time t in z^{th} stage.

$ERC_i(x)$ = expected response cost to be paid for internal risks to occur till period x that is evaluated at i^{th} gate.

$IC_i(x)$ = expected fixed cost to be paid during period x that is evaluated at i^{th} gate. This cost is added to the initial budget $IC_0(x)$ allocated to a project at Stage 0.

$RRC_i(x)$ = total estimated cost that is a sum of the fixed cost to be paid at gate i for time x and the expected variable cost with sales volume predicted at gate i for t_s.

$TRC_i(x)$ = total response cost at gate i for $x = RRC_i(x) + ERC_i(x)$.

$PR_i(t_s)$ = expected profit ratio for time t_s that is evaluated at i^{th} gate.

$OC_i(t_s)$ = expected unit variable cost to be paid for time t_s that is evaluated at i^{th} gate.

$S_i(t_s)$ = expected sales volume for time t_s that is evaluated at i^{th} gate.

$P_i(t_s)$ = expected price per unit for time t_s that is evaluated at i^{th} gate.

$ES_i(t_s)$ = sales volume change due to impact from external risks for time t_s that is evaluated at i^{th} gate.
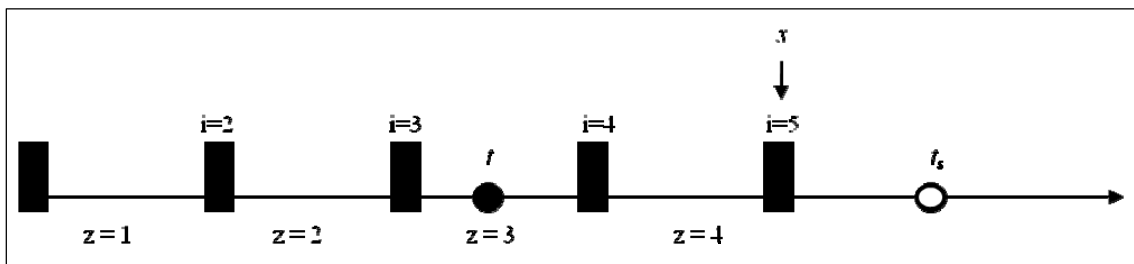
Figure 1. x, t, t_s, I, and z in NPD process.

Risk assessment for internal risks. In this study, two different response strategies are used to treat the internal risks occurring at a stage: risk avoidance ("Avoid" strategy) and risk acceptance ("Accept" strategy). Risk avoidance is the complete removal of the possible occurrence of a risk. This can be done by a project budget increase or excluding any uncertain activities, parameters, functions, and cases from the NPD process.

Conversely, risk acceptance involves that a minor or small impact from the risk is expected, changing either design or production processes is more efficient, delaying of a stage is more economical, or passively doing nothing, except monitoring the status of the risk is more desirable than risk avoidance. Risk avoidance is the antipode of risk acceptance, in terms of cost and time. This means the other two strategies, "Transfer" and "Mitigate", for threats can be also selected with some prorated cost and time, as shown in Figure 2.
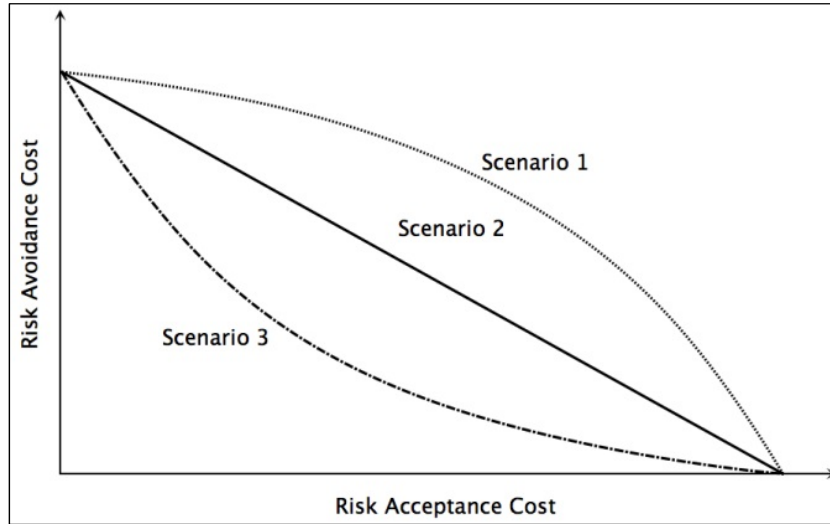

Figure 2. Three different relationships (scenarios) between risk avoidance and risk acceptance.

An exponential distribution is assumed for internal risk occurrences in this study. Then, the expected number of occurrences of jth risk is determined by $\lambda_{zj} \cdot d_z$. The expected response cost to be paid for all future internal risks after i^{th} gate is determined by equation (1). The response cost is to be modified at $(i + 1)^{th}$ gate in $(z + 1)^{th}$ stage with new internal risks. $ERC_i(x)$ involves both response cost for risk avoidance and delay cost for risk acceptance. In equation (1), the decision making variable is the probability of avoiding j^{th} risk occurring at z^{th} stage, ϕ_{zj} to minimize $ERC_i(x)$. The optimal ϕ_{zj} value is obtained by the LP method. When internal risks occur, the firm must decide which strategy is better between risk avoidance and risk acceptance to minimize the response cost. Therefore, the project manager should be capable of deciding GO/NOGO for the NPD projects at gate i on the basis of cost and profit. It should be noted that the profit is a predicted value for time t_s at gate i. Another important consideration to compute $ERC_i(x)$ is the market launch time expected by the project at gate i. The expected launch time can be early or tardy depending on either the response cost with risk avoidance, $Y_{zj}(t)$ or the time delay with risk acceptance, $Y_{zj}(t)$. If either $X_{zj}(t)$ or $Y_{zj}(t)$ is high, the market launch time expected at gate i would be delayed. The time, $Y_{zj}(t)$ can be converted to cost.

$$ERC_i(x) = \sum_{z \geq i} \sum_{\forall j} \{\lambda_{zj} \cdot d_z [\phi_{zj} X_{zj}(t) + UC_Z(x)(1 - \phi_{zj}) Y_{zj}(t)]\} \tag{1}$$

Three scenarios define the relationship between risk avoidance and risk acceptance, as shown in Figure 2. In this study, risk avoidance is to make the risk occurrence probability zero or to make the risk impact zero through active response plans, while risk acceptance either allocates actively appropriate contingency or does passively nothing, except monitoring the status of the risk. That is, the highest response cost is expected if the most active response plans are applied to avoid a risk, while the longest delay is expected when the most passive plans are adapted for accepting the same risk. Three curves with different tangents are shown in Figure

2. It should be noted that the cost required for treating a risk with either "Transfer" or "Mitigate" strategy can be represented as any intermediate point of these curves. Depending on one of these scenarios, $ERC_i(x)$ is determined after the market launch time is set. Figure 2 presents three scenarios that lead to construction of the following constraints:

For Scenario 1,

$$\phi_{zj}[X_{zj}(t)]^2 + (1-\phi_{zj})[UC_Z(x)Y_{zj}(t)]^2 \leq tc_{zj} \quad \text{for} \quad \forall z, \forall j \tag{2}$$

$$\sum_{z \geq i-1} (1-\phi_{zj})Y_{zj}(t) \leq c$$

For Scenario 2,

$$\phi_{zj}X_{zj}(t) + (1-\phi_{zj})UC_Z(x)Y_{zj}(t) \leq tc_{zj} \quad \text{for} \quad \forall z, \forall j \tag{3}$$

$$\sum_{z \geq i-1} (1-\phi_{zj})Y_{zj}(t) \leq c$$

For Scenario 3,

$$\phi_{zj}X_{zj}(t) - (1-\phi_{zj})/UC_Z(x) \cdot Y_{zj}(t) \leq tc_{zj} \quad \text{for} \quad \forall z, \forall j \tag{4}$$

$$\sum_{z \geq i-1} (1-\phi_{zj})Y_{zj}(t) \leq c$$

where tc_{zj} of each constraint is a given constant specifying the maximum budget a firm would invest to respond on j^{th} internal risk occurring in z^{th} stage and c is the maximum allowable time delay.

As mentioned before, $ERC_i(x)$ is modified at every gate. Therefore, total response cost at gate i ($TRC_i(x)$) can be determined by equation (5), where $RRC_i(x)$ is total estimated cost expected at gate i for time x. $RRC_i(x)$ is a sum of the fixed cost, including project costs, to be paid at gate i for time x, $IC_i(x)$ and the expected variable cost with sales volume predicted at gate i for t_s.

$$TRC_i(x) = RRC_i(x) + ERC_i(x) \tag{5}$$

where

$$RRC_i(x) = IC_i(x) + OC_i(t_s)\int_0^{t_s} S_i(x)dx$$

The sales volume predicted at gate i, $S_i(t_S)$ can be defined as a continuous/discrete function or constant by the project manager, and changed by the external risks.

Risk assessment for external risks. Project success is influenced by not only the internal risks, but also the external risks. The external risks are often uncontrollable. Typical examples include economic shift change, oil price, stock price, and money exchange rate. These risks can impact a project positively or negatively to certain degrees at a stage. It is difficult to measure the impact accurately. However, this can be estimated quantitatively from historical data and expert knowledge. Park et al. (2011) presented a fuzzy approach and Grey system theory method to measure the impact of various external risks and Kim et al. (2013) used multiple response optimization models to evaluate their significance. This study uses a fuzzy approach to measure the impact on sales volume and profit. Triangular membership functions are assumed due to their closeness to normal distribution. Then, the positive and negative impacts of risks are evaluated on the basis of sales volume increment or decrement at time t, respectively. Normalization is followed to adjust the impact values between 0

and 1, and followed by a defuzzification process to obtain real values along with the clipped center of gravity method. Finally, sales volume change $ES_i(t_s)$ is determined by equation (6).

$$ES_i(t_s) = 1 + \sum_k f_{ik}^p - \sum_k f_{ik}^n \tag{6}$$

where f_{ik}^p = positive impact of kth external risk at i^{th} gate for time t_s; f_{ik}^n = negative impact of kth external risk at i^{th} gate for time t_s.

Profit Ratio Model

In general, profit is determined by sales volume, unit price, and cost. When a project successfully enters Stage 5 (production stage), a firm sells developed products and obtains profit. In this study, the profit is defined by equation (7). The first term is total income from the initial point of sales ($x = 0$) to a certain time t_s where $0 \leq t_s \leq$ min (one year, EOL) minus total costs paid till gate i for x. In this study, a continuous sales function is assumed. The total sales takings are determined by total sales volume and unit price is predicted at gate i for t_s. However, both the total sales takings and total estimated costs are affected by the sales volume change, $ES_i(t_s)$ made by external risks. The second term is the total response cost for the internal risks to occur for x. Furthermore, $P_i(t_s)$ in equation (8) is the unit price estimated at gate i that is based on its initial value defined in Stage 0 and modified by both sales volume and costs in the stages to follow.

$$\text{Profit}_i(x, t_s) = [\int_0^{t_s} S_i(x) \cdot P_i(x)dx - RRC_i(x)]ES_i(t_s) - ERC_i(x) \tag{7}$$

$$P_i(t_s) = P_0(t_s) + [RRC_i(x) \cdot ES_i(t_s) + ERC_i(x)]/S_i(t_s) \tag{8}$$

$\text{Profit}_i(x, t_s)$ is an estimated value at i^{th} gate for time t_s that is estimated at every gate. Then, the $PR_i(x, t_s)$ is a value of $\text{Profit}_i(x, t_s)$ divided by the entire costs including fixed and variable costs, as shown in equation (9). The value should be greater than 1. If a high profit ratio is expected, it could be used to make a decision of GO/NOGO for a project at gate i.

$$PR_i(x, t_s) = \text{Profit}_i(x, t_s)/[RRC_i(x) \cdot ES_i(t_s) + ERC_i(x)] \tag{9}$$

Decision Making for NPD Projects

GO/NOGO decision making at i^{th} gate for a project is done by $ERC_i(x)$ and $PR_i(x, t_s)$. The major decision making variable is the probability of avoiding j^{th} risk occurring in z^{th} stage, ϕ_{zj} to minimize $ERC_i(x)$. $(1 - \phi_{zj})$ is the probability of risk acceptance. In this study, the obtained value ϕ_{zj} is classified into three groups, as shown in Table 1. It should be noted that project manager can use various ways of grouping the probability of risk acceptance based on historical outcomes of the previous projects, or his/her own experience.

The minimum $ERC_i(x)$ value is plugged into $PR_i(x, t_s)$. Then, the result is compared to the threshold $PR_i(x, t_s)$ value determined by the manager. If it is higher than the threshold value, the corresponding project would be continued to its next stage. The profit ratio model developed in this study can trace the changes of target sales volume and price with response costs invested for handling risks as NPD stages are proceeding.

Table 1

Classification of the Probability of Accepting Risk

Φ_{zj}	Description
0-0.4	Risk acceptance is more effective
0.4-0.6	"Transfer" or "Mitigate"
0.6-1	Risk avoidance is more effective

The Solving Procedure

Seven steps are required to apply the profit ratio model for a given example, as follows:

Step 1: Setting $S_0(t_s)$, $P_0(t_s)$, $IC_0(x)$, and $OC_0(t_s)$ at Stage 0 for time t_s.

Step 2: Setting $IC_i(x)$, D_z, and $UC_z(t)$.

Step 3: Estimating λ_{zj}, $X_{zj}(t)$, and $Y_{zj}(t)$.

Step 4: Estimating the maximum budget tc_{zj} to be invested for responding to j^{th} internal risk in z^{th} stage by using risk avoidance and the maximum allowable time delay c if necessary for taking risk acceptance. Then, finding the optimal ϕ_{zj} to minimize $ERC_i(x)$ for j^{th} internal risk in z^{th} stage depending on three scenarios.

Step 5: Deciding for an external risk, whether its impact is either positive or negative. Then, determining sales volume change, $ES_i(t_s)$.

Step 6: Synchronizing all values obtained from the previous steps to compute the profit ratio, $PR_i(x, t_s)$ under each scenario.

Step 7: GO/NOGO decision can be made on the basis of $PR_i(x, t_s)$ at gate i.

The importance of historical data is emphasized again to obtain the most reasonable values for Steps 1 through 5. Suppose that multiple NPD projects have been launched at a fiscal year and each project has spent the budget allocated by the firm. Both internal and external risks are expected to be occurred after the current gate. Also, suppose that project manager can estimate mean occurrence rate of each internal risk from the firm database. Project manager should decide the optimized response strategy, either risk avoidance or risk acceptance, to respond each internal risk with minimum cost to be paid till next gate arrival. That is, the optimal ϕ_{zj} to minimize $ERC_i(x)$ for j^{th} internal risk in z^{th} stage, depending on three scenarios, is obtained by using the data required in Steps 1 through 5. This can be done easily through the constOptim function of Optimix library in $R^{\circledR}$ package. When the project arrives at the gate, the external risks to be occurred at sales time t_s are predicted to measure sales volume change affecting the profit figure either positively or negatively. The sales volume change is estimated by fuzzy theory. Finally, the project manager synchronizes all cost data and risk impacts into the profit ratio model and makes GO/NOGO decision on the project depending on the profit ratio.

Conclusion and Discussion

The correct decision making on GO/NOGO for a project is difficult at a gate in the NPD process, because project success is dependent on various views, such as market, management, finance, and the firm itself (Park et al., 2011). Nevertheless, a project manager should logically allocate the most valuable resources to the most promising projects. L. M. Dragan, D. M. Dragan, and Mirjana (2010) presented the method of ranking projects, which is based on net present value (NPV), project risk, level of investment, payback period for returning the investment, and the rise of market share along with corresponding weights under different types of projects. However, their model does not give an optimal solution. Since successful new products make high profits in general, it is desirable that the project manager can predict the profit expected from a project during the NPD process with quantitative models. The profit is determined by sales volume with unit price and costs incurred in the NPD process. In this study, it is assumed that the risks occurring in a stage affect the sales volume, price, and costs. Two types of risks are considered to estimate the profit: internal risks and external risks. The internal risks are the risks related to project characteristics and require appropriate responses to mitigate their impacts on the project. The two ways to handle the internal risks are risk avoidance and risk acceptance. Since both ways incur a certain cost, depending on three different scenarios, the optimal solution is required to minimize

the costs. The external risks are uncontrollable and assumed to either positively or negatively affect sales volume.

Although the developed framework can estimate the profit expected at the current gate, it has several limitations, as follows:

The risk occurrence rate may follow a probabilistic distribution that must be determined to utilize the framework in industries. A firm should construct databases to accumulate data related to risk types, frequencies, and occurrence times by projects.

The external risks do not occur until the production stage (Stage 5), because they are assumed to affect project survival, not successfully. That is, a project can be reluctantly killed due to external risks like terrorism or incredible change of market needs, even though its current status is successful. However, the impact of the external risks occurring before the production stage can be quantified and adapted for the developed model by handling them by either risk avoidance or risk acceptance.

All internal risks incurred till the end of Stage 4 defined as time x are considered to estimate the profit expected at the current gate. However, the length of a given stage can be set as time x to determine $ERC_i(x)$ and $RRC_i(x)$.

GO/NOGO decision making for a project on the basis of both internal and external risks should be validated through other criteria than the profit ratio. Furthermore, sensitivity analysis should be performed for the profit ratio with all input values.

A firm usually launches multiple numbers of NPD projects and allocates its most competitive resources to the projects. Therefore, it should establish a logical project management system to evaluate the project performance shown under various risk scenarios. This study developed a framework to predict the project performance in terms of profit. The framework can predict the profit to be made by a project at any gate of the entire NPD process. If a project is expected to have low profitability through the model due to various reasons at a given time point, it would change its goal and objective or be terminated.

A quantitative model is developed to predict the profit ratio at any gate of the entire NPD process. The model reflects all costs related to both NPD project and risks. A project manager can evaluate the project performance in terms of profit predicted at a gate. The firm should have a large scale database from previous NPD projects in which essential data sets such as project types, project costs are invested in stages, stage lengths, risk types and response strategies, risk occurrences, estimated risk impacts, and critical parameter values to estimate the profit that can be extracted. Then, those parameter values are plugged into the developed model to obtain the optimal PR value and to make more scientific decision on the project lives. However, there are many issues to be solved in future including accuracy of data sets and missing values treatment methods.

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Women's Cooperatives Contributions to Local Region Economy: Seferihisar Agricultural Cooperative Development Model-Turkey

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The cooperative movement has played a very important role in the social and economic development of all countries since 19th century's second half. Cooperatives provide health, housing, and banking services; they promote education and gender equality; they protect the environment and workers' rights. According to 2014's data, the total number of cooperatives is 79,486 in Turkey, while the total number of partners of cooperatives is approximately 7.8 million. The research's sample group "Hidirlik Agricultural Development Cooperative" was founded by the wife of the Seferihisar's mayor and six women. It has been a subject of curiousity that the contributions of the cooperative have developed the economy of the region since 2010. Therefore, various questions asked to the president and members of the cooperative, and significant results were obtained. In this research "Interview technique" was used. The fact that within the boundaries of local governments, the establishment of "women's cooperatives" and their active management can be supported with 10 basic criteria for the regional and national development can be predicted. These dimensions: ecological balance and sensitivity, the revival of the tourism sector, the mobility of logistics activities, new investments and increase of land value, the increase of women employment, the increase of healthy living standards, increase of competitiveness and trade earnings, the creation of new brands, widespread of the agricultural sector, and the increase of social and educational level of women. The similiar implementation of "Seferihisar Women's Cooperatives Model" in the research is considered form an important enterprenurship model not only in Turkey but also for all countries.

Keywords: women's cooperative, local region economics, women's enterprenurship, enterprenurship model

Introduction

Cooperatives emerged as economic organizations in the world during the middle of the 19th century. Rapid changes and transformation as a result of the Industrial Revolution, unemployment, domestic migration, urbanization, and economic and social problems such as the inequalities in income distribution contributed much to the emergence of cooperatives and they were introduced as a flow of consumers cooperatives by the workers in England which was the centre of the Industrial Revolution. During the recent years, France has followed England with the producers' cooperatives and Germany with artisans' and agricultural credit cooperatives.

In accordance with the Cooperatives Law No. 1163, a cooperative is defined in Turkey as follows (after an amendment in 2004): Cooperatives are bodies with variable members, variable capital, and legal identity that

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are established by natural and public legal entities and private administrations, municipalities, villages, societies, and associations in order to ensure and maintain certain economic interests and especially the needs of their members toward professional life and living standards by means of mutual assistance, solidarity, and service as trustees to each other.

Agricultural cooperatives are groups of farmers who bring resources together used to effectively capture the best product. Resources are, seeking marketing channels for seed during product cultivation, providing agricultural machinery, the moral and financial support of the members, and providing better and more fair prices. The purpose of creating cooperatives is to create a secure environment in terms of food safety and to improve the living standards among other members of society (Msimango & Oladele, 2013).

Obstacles faced by women where in the most important condition for economic empowerment in the labor force participation and taking place gender inequality in economic power-sharing impoverished women day after day.

Existing examples of "loan application" in the world and in Turkey are widespread in order to prevent women's poverty. There needed education, counseling, guidance, and studies including providing fund-financing issues for women entrepreneurs.

Women's cooperative movement has started to be founded with demands of female entrepreneurs movement which comes from the base for bringing into economy of the female labor force, protection, support, and development of social and cultural activities of women, provision of better health and improved environment in the early 2000s in Turkey. This kind of cooperatives partnerships are 80-100% of women.

Among the main aims of the women's cooperatives establishment:
• Providing training to its partners to develop the right skills needed;
• Providing the necessary inputs and equipment for the production of partners' goods and services;
• Providing social and cultural needs to its partners, preparing the ground where healthy and an improved environment are provided.

Literature Review

Women's Cooperative

Cooperatives can be formed for a number of reasons. As long as there are common economic, social and/or cultural needs for which people feel it is advantageous to join together and form enterprises that are jointly owned and democratically controlled, and cooperatives are beneficial. Cooperatives can be classified in different ways based on a number of criteria such as the types of groups served, geographic territory served, industry, sector, functions performed, membership structure, legal status, and financial structure (Krivokapic-Skoko, 2002; Wissman, 1997).

Women's membership in most agricultural cooperatives in the region is concentrated usually in rather small numbers and in the lower ranks. In many cases, women have no voting power. This is usually vested in the "head of house" or the official land owner. Nor are women eligible to sit on management boards where key decisions are made. In a movement dedicated to improving a lot of disadvantaged workers, cooperative leaders have been slow to perceive, and too often resistant to change the disadvantaged position of women farmers (Stephens, 1995).

Women's Entreprenurship

Schumpeter famously defined the entrepreneurship is carrying out of new combinations of firm organization-new products, new services, new sources of raw material, new methods of production, new markets, and new forms of organization. Entrepreneurship is also the control and deployment of resources to create an innovative economic organization (or network of organizations) for the purpose of gain or growth under conditions of risk and uncertainty (Dollinger, 2008).

Women entrepreneurs tend to operate in smaller businesses; usually go solo; tend to concentrate on sectors that are considered by financiers to be less profitable; tend to have lower growth and turnover compared to male-owned businesses. Women's entrepreneurship is both about women's position in society and the role of entrepreneurship in the same society. Women are faced with specific obstacles (such as family responsibilities) that have to be overcome in order to give them access to the same opportunities as men.

The rise of women entrepreneurship in industrialized economies is a recent phenomenon. The participation of women in economic life in developing countries contributes to a more human, cooperative, balanced, and pleasant work environment in women-led enterprises, in which individual development is engraved. Hisrich and Brush (1987) argued that an increasing number of women are seeking to penetrate the world of entrepreneurship, although this activity entails many risks, and the expenditure of time and energy. Numerous studies deal with the importance of women entrepreneurship in various regions in the world.

Cooperatives as a model of organization for women have been a very new, exciting, and active subject in Turkey. Women cooperatives are located from Naple to Iran in the world. Especially, in the countries which are underdeveloped economically, womens economic development is important for them (FAO Annual Report, 2003).

Research Methods

The research's sample group consists of six board members and chairman of the cooperative. In this research, the "interview technique" was used. Chairman and board members of the cooperative were asked: When and with whom they started the first cooperatives work? They consulted with whom? What kind of problems they faced? And how they reached this stage?

The objective of the research: determining what the contributions of the "Hidirlik Cooperative Agricultural Development" to develop the economy of the region of Seferihisar district of Izmir in Turkey since 2010. Also, this research involved members of cooperatives perceptions about their roles in cooperatives.

As a result of the research, it has been found that women's cooperative is contributing to the region with 10 basic criteria.

Research Results

As stated in the earlier, research questions were completly prepared by the researchers considering "cooperative literature".

The main problematics of the research determine: what problems women who established cooperative faced after the establishment stage? And once established, moreover observed that women entrepreneurship has more impact on the local development?

Ten main criteria were taken into consideration in the reseach. It transfers completely the thoughts of women's participating in speeches. Therefore, criteria have tried to describe formed from the resulting title.

Ecological Balance and Sensibility

All individuals and organizations have their own responsibilities towards the environment they live. For example, a company has the responsibilities of not only its employees and the shareholders but also the environment.

Aktan (2008, p. 103) described organization's inner responsibility towards employees, shareholders, and executives along with this responsibility there are six other types of responsibilities that are the organization's external responsibility.

Accordingly, the main responsibilities of the company are nine. These are: 1). responsibility towards employees, 2). responsibility to shareholders, 3). responsibility towards managers, 4). responsibility with customers, 5). responsibility with opponents, 6). responsibility towards nature and the environment, 7). responsibility towards suppliers, 8). responsibility towards government, and 9). responsibility towards society.

In addition, Uydaci (2011, p. 129) underlined socially responsible companies are a subsystem of the extended social responsibility in marketing and, he stated that if desire and sustainable development can be harmonized with those of social responsibility.

Social marketing issues are marketing practice that the benefit of individual, group, or entire community affects the target audience. Then, social marketing issues are usually related to society (Özdoğan & Eser, 2006, p. 4).

Maintaining the ecological balance, nowadays, the environment, air, and water pollution have become the topics to be considered by all people in society. Environment, air, water, and soil pollution seriously affects the balance of flora. Therefore, in the step of using the nutrients taken by people from the soil, these products are required to produce under natural conditions without adding harmful substances to the soil, habitat, and the goods produced (Yildiz, Spahi, & Yilmaz, 2008, p. 14; Akdur, 2005, pp. 14-15; Karaca, 2008, p. 20; Keleş, Hamamci, & Çoban, 2005, p. 110; Kalburan, 2013, p. 976).

Revival of the Tourism Sector

Tourism is one of the sectors who impellent to local economic development tanesidir (Özelçi & Altinkaya, 2009, p. 46). The development of the local economy depends on the tourism maybe in three ways (Rogerson, 2002, p. 95).

Firstly, especially fields intended on "Coastal tourism" are discovered by entrepreneurs who detect opportunities about improvement in these regions. Secondly, the small tourist towns are becoming touristic areas with the development of personal mobility, outside the initiative of local people. Finally, it is being developed in order to create employment and new job opportunitie (Inskeep, 1991, p. 10; Tosun, 2005, p. 336).

In the scope of this research, according to data received by the chairman and members of the cooperative, after completing the restoration of Seferihisar-Kaleiçi project, Izmir Metropolitan Municipality also has been providing support especially in terms of "Financing" the city's development topics and it has undertaken the huge costs that make the whole structure. Photographers have been started coming from all over the Turkey because of the visual presentation and aesthetics of these structures, increased interest in the recently opened boutique hotel. This situation has caused new jobs and increased the work force and field about "pensioning" in the district. All of these activities have helped Seferihisar be town to the "preferred" town for local tourism.

The Mobility of Logistics Activities

Essential situation for development of a country is investment, trade, and healthy operation of transport

chain. Sustainable development depends on it. Ensuring the same level of transport and communications infrastructure all over the country, and spreading wealth centers all over the country have great importance on the development of the country's industry.

Development and growth on the form of national economy integrated into the region can only be achieved through improved transportation infrastructure (Logistics Industry Report, 2013, TUSIAD, 2005 Research Report 87).

According to the survey, women have started to sell grapes produced by them in their homes and gardens by "e-commerce". Naturally, the significant increase in the amount of ordering has been affected by logistics mobility in town.

Products, which women make and offered to customers living in Izmir and Istanbul through packages every day, have increased the number of "Cargo Business". Women in production, have began to advertise their product on "WEB Page" and they have started to sell "daily soilage" to Istanbul and "breakfast ingredients" to Izmir. In general, "Producer Market" founded Tuesday has also started to sell similar products. This situation has provided a new revenue opportunity for women. Customers from Izmir and the surrounding towns buying natural products have led women to make more sales and production. Thus, more production and sales causing an increase in the earnings of women have increased their self-confidence. Members have brought a certain standard for packaged products which counted in the cooperative. The cooperative has provided stronger than one's effort, because of the fact that women put a small commission such as 2% on the products they produce.

New Investments and Increase of Land Value

It is a known fact that women's employment is important in the development of a country. Today, women's employment has not reached the desired rate due to reasons, such as the pressures created by the gender roles and as a consequence of this within the family responsibilities to be undertaken largely by women, lack of education level, and limiting of women's employment owing to some results. Employment participation has a meaning beyond to earn money for a woman. Participation in employment is a prerequisite for standing on one's own two feet and self confidence of women (Publications of Women and Men Equal Opportunities Commission, 2013).

"Revolutionary Movement" has led to arrival of new investors. For example, "boutique hotel" and "pansioning" concept, created by residents of the district in the touristic area, have been attracting people from outside the city. This, naturally, has led to an increase of "land value" in the district.

Increase of Women Employment

A reason for not being at the desired level of female employment is that women can't benefit enough from educational opportunities. According to data from the year 2012, while labor force participation rate was 16.7% in non-literate women in the country, this ratio increased 30.6% in high school graduates, 38.1% in vocational and technical high school graduates, and 70.9% in higher education graduates. These data suggest that the level of education is important because it shows the relationship on labor force participation.

"Women's cooperatives" idea of the district mayor which women should participate in production in this city, is integrated with the question "what can we do" of female members. First, reaching the elderly of the city, and asking what were traditional dishes during the past years. For example, meals "gummy tarhana" is no longer appeared to be done. After that, it was decided to make the forgotten dishes again. Thus, "demanded and

popular new flavors" (noodles, jam, soap, olives, and olive oil) have become among the demanded products for customers coming to shopping arcade.

In 2000, small market stalls, which began operating with 10, have become a place visited by hundreds of customers today. Having more visitors coming to take "Organic Products" with various crafts made by women who have also led to activation of their husband. Formerly, men usually were sitting "coffeehouse" but, now they supported their wives, and they had started to participate. This situation, the increase of "women's cooperatives" or "women producers" maybe become the largest output for the country's economy. This sector is the only effective sector in which women mobilized men.

Increase of Healthy Living Standards

In recent years, both plants and animal production have begun to harm the environment, animals, and humans. In contrast, organic production protects the environment and health, and reduces global warming in 37% (S. Ünal, http://orgprints.org/25212). In 2000, it was carried out on eight million hectares of organic farming in the world, But today, organic production is carried out in more than 110 countries over 31.8 million hectares with 623,174 certified manufacturer. Organic agriculture has begun in 1984-1985 in Turkey with demand from abroad. Raisins, dried figs, and dried apricots are the first organic product.

Especially, in the last 10 years, production method also known as "organic agriculture" and "good farming" caused a more active action in this region. An interesting development behind this change has been realized with "seed swap rules". When purchases of local seeds were banned in the country, the villagers compulsorily began to take seed imported from abroad. But these seeds were not preferred, because of both unhealthy and not the desired product quality. More importantly, even the villagers have begun to move away from agriculture because of this negative atmosphere.

Therefore, a method has been developed for increasing the production and sale of "organic agriculture" products. Organic seeds stored in previous years, changing hands, have begun to find new owners with "clearing procedure". Thus manufacturer, getting seeds produced the "seed centers", produces more healthy and high quality fruit and vegetables. These products haven't sold in "Bazaar" formed only on Sunday. Also, selling has been started in "producer bazaar" (spices, fruits, vegetables, honey, herbs, pickles, bread, cheese, eggs, etc.) on Tuesday. This situation has caused customers to come from neighboring districts. This means that the products produced have enabled easier sales.

"Agriculture Panel" has been established by the council, because of providing "self-control" among people in the city about both the quality and sales. Manufacturers who don't comply with "declaration of food" have been punished. Firstly, every manufacturer, wishing to sell, must take the "Health Card" from municipality. Otherwise, they will not sale anything. For example, it is forbidden to put "glucose" instead of sugar in sweet products such as jam and so on. If they do not comply, they will be punished immediately.

Increase of Competitiveness and Trade Earnings

Support of entrepreneurship in Turkey is a phenomenon that began with the accession process European Union (Eren, 2002, p. 369). In terms of improving the distribution of income, entrepreneurship is encouraged, especially in rural areas and less developed regions.

Cooperative is a kind of partnerships, which cooperation with economic and social opportunities for achieving a common goal, by bringing together solidarity and bail. A Turkish goal that is not included in the economic potential of women is to be activated for increase prosperity. It is important that ensuring cooperation

between women entrepreneurs own, and creating national, regional, and international levels in the organization and collaboration.

According to the Government Policy in 2010, approximately, 100 establishments of "Women, Environment, Culture, and Business Cooperative" are desirable in the country each year. Thereby, women will be able to find opportunity about working, producing, and gaining economic income in cooperatives established from them. Turkey Cooperative Strategy and Action Plan were prepared under the coordination of the Ministry, and emphasis on women's cooperatives; studies were conducted about organizing under the roof of cooperatives for provision of female entrepreneurship and enhancing the ability of the economy to take part in as an actor (Cooperatives and Women's Cooperatives Booklet, 2012).

Creation of New Brands

Cooperative members, having affluent fields in terms of vineyards (Kavacik Üzüm Karasi) surrounding the city, wrote a project about how to start "wine production" to Development Agency (institutions supported by the state). However, they could not get any positive response in this regard, changing the scope of the project, they produced "Molasses" and tried to create new a "brand". Also, they used grapes in the "pastry industry", and they had created opportunity as a secondary market.

Widespread of the Agricultural Sector

People living in Seferihisar realized money earned from agriculture. So that, the number of people that wish to migrate to big cities with children has been decreased. People, seeded in the field with a "uniform product" (for example, only tomato), in the past, nowadays plant easier and quicker products like fruits and vegetables in area that they found empty. So that, they are looking for a way to increase their income.

Increase of Social and Educational Level of Women

The expansion of trade activities in the city has expanded economic level of women participating in production, thereby visibility of women in social life has been increased. The increase of earnings has increased the desire of women to educate their children and grandchildren. Female students have encouraged to go to "university" because of close to Izmir and economic freedom. This situation has begun to cause increasing number of highly educated women in the district.

Conclusion

There are some reasons why women's cooperative is so successful in Seferihisar district which is close to Izmir. The first and perhaps the most important is the district mayor. The mayor's most important project is "Slow-City Project". He has done a serious work for Seferihisar in order that "brand city".

The second is that the wife of the mayor who is founding president of the women's cooperative and has given seriously support to spouse. In this research, the most important issues to be taken into consideration for creating a city brand in local municipalities is that the role of the local authorities is very important.

According to the outcomes of the study, "women's cooperatives" is an acceptable "sustainable major source" for the country's economy. Also, particularly in terms of women and children, it is social policy and important formation that increase the level of development.

Therefore, this research has shown that all "added value products", "from agriculture", and "derived from agricultural products" in the development phase of the development level of countries will be able to be a serious "leading force" to both local and regional development of the country.

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Celebrity Endorsement and Consumer Buying Intention;
Television Advertisement for Perfume

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This present paper explores the celebrities appearing on television advertisements. The purpose is to identify the influence of celebrity endorsement on consumer buying intention in Sri Lanka. Television Advertising is one of the marketing communication tools used to receive the attention of the customer and build their loyalty to perfume brands. Celebrity advertisement is an important and frequently used marketing tool to directly influence the consumers' purchase intentions. The aim of this study is to determine the effect of celebrity endorsement on customer purchasing intention for perfume brands. The survey method was used as the research method. Questionnaire was utilized in gathering information from the respondents in Colombo and Gampaha in Sri Lanka. Cluster sampling was used to select a sample size of 100 and collected data were analyzed descriptively using the SPSS 20.0 version. Correlation analysis was conducted to establish the nature of the relationship between the celebrity endorsers and consumer purchasing intention. Results showed significant relationship between the celebrity endorsement (likability, credibility, personality, attractiveness, and expertise) and consumer purchasing intention, so that all five hypotheses were accepted by this exploration.

Keywords: celebrity endorsement, likability, personality, attractiveness, credibility, expertise and consumer purchasing intention

Introduction

Ancient tombs have proven that fragrance played a part in the lives of ancient Egyptians dating back as far as King Menes in around 3500 and 3000 BC. In ancient times, burning incense and sweet herbs was the privilege of priests in the earliest civilizations. It was these ceremonial burnings that gave perfume its name. In Roman times, worship to the gods took place "per fumum", meaning "through smoke". It was this Latin phrase which became the modern word "perfume".

Perfumes have been known to exist in some of the earliest human civilizations, either through ancient texts or from archaeological digs. Modern perfumery began in the late 19th century with the commercial synthesis of aroma compounds such as vanillin or coumarin, which allowed for the composition of perfumes with smells previously unattainable solely from natural aromatics alone.

In recent years, celebrities have signed contracts with perfume houses to associate their name with a signature scent, as a self-promotion campaign. The scents are then marketed; the association with the celebrity's name usually being the selling point of the campaign. Such products generally do not have the longevity of classic fragrances. A notable exception is "White Diamonds", endorsed by Elizabeth Taylor and made and marketed by Elizabeth Arden. It was still the best-selling celebrity-endorsed perfume for 20 years after its introduction in 1991. In 2013, it was revealed that Beyoncé's line of perfumes heat is the best-selling celebrity fragrance line with $400 million earned at retail globally.

Television is the most effective medium for reaching today's customers and it is also the most efficient for introducing brands to consumers (M. P. K. Jinadasa, 2011b; 2014a; W. W. M. P. K. Jinadasa, 2015). M. P. K. Jinadasa (2014b) stressed that the advertising through television allows marketers to show their business, product, or service and communicate with a wide audience. It allows one to actually demonstrate the benefits of ownership. Television appeals to the literate as well as the illiterate and this is one feature of TV that makes it unique and different from other media.

As M. P. K. Jinadasa (2011a) and M. Jinadasa (2015) have pointet out, in this age of globalization, technology has shaped the possibility and likelihood of the global culture. The use of the internet, satellites, and cable TV is wiping out cultural boundaries. Global entertainment companies have given form to the perceptions and the ideals of ordinary citizens, wherever they live. This spread of values, norms, and culture tends to promote western, particularly American, ideals (M. Jinadasa, 2016b).

The use of celebrities, in order to increase the sales and/or the recall value of a brand, is called celebrity endorsement. According to H. H. Friedman and L. Friedman (1979), a "celebrity endorser is an individual who is known by the public for his or her achievements in areas other than that of the product class endorsed".

In Hollywood and Bollywood, the entertainment industries are based on the creation of stars and leading icons that have had a very significant influence on the public. Public fascination of celebrities and the extravagant lifestyles they lead have had a widespread influence on fashion and popular culture (M. P. K. Jinadasa, 2009; 2013). Through wider access to the internet and intrusive media, people worldwide are highly updated on the latest trends in Hollywood, or the latest launches and scandals in the music industry (M. Jinadasa, 2016a).

Due to the immense availability of media, the emergence of a new stage of commercial communication has taken place. Companies are constantly finding new ways in which they can communicate with their consumers in both a conscious level and subconscious level by surrounding customers with constant brand messages. At a conscious level, the consumers choose the communications they are interested in (M. P. K. Jinadasa, 2011b). If they are looking for a specific product or service of interest, they will selectively perceive relevant brand messages. The battle for a piece of the consumers "mind space" has made companies want to associate their brands with desirable and trustworthy celebrities in order to attract consumers' attention and interest. The use of celebrities as means of communication has been commonly utilized in advertising and branding. This is done because it is assumed that celebrities have a powerful effect on the affluence of the brands they endorse. Celebrity endorsement has been defined as: "any individual who enjoys public recognition

and who uses this recognition on behalf of a consumer good…" (Byrne & Breen, 2003). Research statistics has shown that the use of celebrity advertisement has doubled in the past 10 years, which is statistically related to the consumer goods industry. One in four adverts features celebrities as opposed to one in eight in 1995. An increase in the use of celebrities in brand message communication between non-luxury brands and luxury brands has taken place.

Celebrities are brands in themselves, and in recent years, the amount of celebrities that have launched fragrances in their names or endorsed a fragrance escalated. According to McCracken (1989), a celebrity endorser is an "individual who is known by the public for his or her achievements in areas other than that of the product class endorsed".

Many celebrities see the multibillion dollar fragrance market as a lucrative way to expand their already famed brand, their name. Celebrities that were formerly associated with the music industry or/and film industry are exposing their presence in the consumer market, particularly the fragrance market. The scents are marketed with the celebrity's name being the selling point. Celebrities are taking the opportunities to make full benefits of their fame whilst it lasts, and therefore want consumers to listen to their music, watch their movies, buy garments from their latest launched clothing line, and indulge their latest signature perfumes.

The fragrance industry has been fragmented, due to multiple reasons and because of increased competition leading to low fragrance life-spans. Fragrance houses are finding creative ways to secure their market shares and boost their sales figures. Expansion strategies such as mergers are common. Another strategy fragrance houses have been employing is celebrity endorsement branding. They cooperate with a celebrity and register trademark, a scent under the celebrity's name. In that sense, they can compete with both their classical fragrances (premium branded fragrances) and the more juvenile oriented celebrity endorsed fragrances.

Research Problem

Studies have shown the use of celebrity endorsers can create a more positive response as well as a higher purchasing intention than non-celebrity endorsers. Industry experts claim sales increase will boost due to the more common availability of celebrity endorsed fragrances that are attracting a younger consumer group.

Advertisers have recognized the value of using celebrities in their advertisements. Celebrities appear in their advertisements and endorse their products. Marketers think a popular admired celebrity will favorably influence consumer's feeling and purchase intention. Shaughnessy (1995, p. 982) opined that "the use of celebrities tends to produce above average brand awareness but only about half of the celebrities have a positive effect on consumer's buying intention towards the product".

Every celebrity advertising campaign does not equally work. Some of them are very effective and some not at all (Dissanayaka & Ismail, 2015). In the context of Sri Lanka, there has been practicing celebrity advertising especially with the television commercials, nobody has conducted a comprehensive study on the effectiveness of the celebrity endorsed advertising.

Therefore, research problem of this study is:

"How far celebrity endorsement influences consumer's buying intention towards perfumes".

Research Objectives

Key objective. With the background in thought, it would be of interest to examine the effects of celebrity endorsed branding on consumers' purchasing intention. The aim of this study is to identify the influence of celebrity endorsement on consumer's buying intention.

Specific objectives.

(1) To study the consumers' attitude towards "celebrity endorsed fragrances" and "Premium branded fragrances".

(2) To identify the effects of celebrity endorsed branding of fragrances have on consumers purchasing behavior.

(3) To examine life style behavior change because of the perfume brands.

Research questions. The questions that then arise are:

How is the consumers' attitude towards "celebrity endorsed fragrances" versus "Premium branded fragrances"?

What effects does celebrity endorsed branding of fragrances have on consumers purchasing behavior?

How does life style behavior change because of the perfume brands?

Significance of the Study

Perfume industries are possible in gaining substantial level of profit through creating eye-catching perfume advertisements, so that there is an important relationship between celebrity endorsement and its affection to buying intention.

Selecting right celebrity in advertisement is critical.

Research Methodology

Sample Size

This research used the quantitative methodology. In the quantitative methodology, basically, the authors used the survey study, which equipped questionnaire for the data collection. This questionnaire administered to a convenient sample that amount one hundred (100) subjects. In this survey, it used one hundred (100) questionnaires covering university undergraduates and the executive level professionals in the Gampaha and Colombo districts. Subjects were limited only to male. Age categorized from 25 to 35.

Collection of Data

Data collected using the questionnaire method among hundred subjects. Thirty eight questions were included in the questionnaire covering both demographic and research objective data. For the data collection mechanism, the authors used five data collectors as research supporters who are very close with the sample and its socio-cultural behaviors. Fourteen days were allocated for the field survey in the data collection. There were two levels of data collection. First, questionnaires were distributed among the subjects and in second, they were asked to fill it as they wished to complete it at their leisure without any pressure. Finally, filled questionnaires were collected by the five research assistants of data collection.

Analysis of Data

Collected data were analyzed statistically using SPSS 20.0 version and descriptive methods were used to analyze the gathered data. Thirty eight questions were based to make the SPSS program for the primary data feeding to SPSS program. For this, technical assistance was made by two data analysts.

In the data analyzing, descriptive methods were used in the SPSS program along with the basic research objectives and questions. Hypotheses were tested through the use of descriptive data analyses along with the conceptual frame-work created from the end of the literature review. In the presentation of data, in addition to the basic statistical figures found, bar charts and scattered tables were created for the effectiveness of data presentation.

Limitations of the Study

This research was limited to its field of study and the scope of selection of sample. In the collection of data, even it is used both questionnaire and interview methods, subjects could be answered in bias and in terms of their personal subjectivities, which is quite impossible to receive their real ideas, so it is also a limitation of this study.

For the convenience of making this research, it used fundamentally both two categories of undergraduates and executives are also a limitation of this research as the variables of consumer buying intention.

Literature Review

Celebrity Endorsement

A celebrity endorser is "an individual who enjoys public recognition and who uses this recognition on behalf of a consumer good by appearing with it in an advertisement" (McCracken, 1989, p. 310). As H. H. Friedman and L. Friedman (1979, p. 63) stated, "a celebrity endorser is an individual who is known to the public for his or her achievement in areas others than of the product class endorsed".

In this paper, celebrity endorsement will be further explored with the use of several determinants. This section describes which factors a celebrity should have to be a solid endorser. To explain the determinants of celebrity endorsement, this study will look at the determinants illustrated by Amos, Holmes, and Strutton (2008). Moreover, the source credibility model and the source attractiveness model will be used as foundation for selecting the determinants (Erdogan, 1999). The determinants described in this paper are: credibility, expertise, trustworthiness, attractiveness, similarity, liking, familiarity, and the match-up congruence with the product. Source credibility depends on expertise and trustworthiness. Source attractiveness depends on familiarity, liking, and similarity.

Likability

Likeability is the "affection for the source as a result of the source's physical appearance and behavior" (McGuire, 1985, p. 239). In addition, McGuire (1985) stated that when people like the celebrity they will also like the accompanying brand and therefore celebrities are used in commercials and advertisements. Celebrity endorsement will influence the consumer's behavior and attitude (G. E. Belch & M. A. Belch, 2008) and advertisers believe that a celebrity can influence the consumer's vision of the company's image. In the view of Kahle and Homer (1985), the process of the disliked celebrity is explained in an experiment that contained a total of 200 men and women participating in the study. The experiment contains the example of celebrity endorsement used with disposable razors by means of John McEnroe; he has been the celebrity endorser for this particular brand. John McEnroe is a tennis player who can annoy people; his extreme rough language on the tennis court is widely known. It can be stated that he is not the ideal endorser of a brand, and that John McEnroe can be assigned to the disliked celebrity group. The company retains him because his image implies concern for protection of self-interest; two factors the company wants consumers to be associated with regarding the consumption of disposable razors. Despite McEnroe is a disliked celebrity, the company uses him as an endorser.

Credibility

Credibility is "the extent to which the recipient sees the source as having relevant knowledge, skills, or experience and trusts the source to give unbiased, objective information" (G. E. Belch & M. A. Belch, 2008). The two most important aspects of credibility are expertise and trust (Hovland & Weiss, 1953). Celebrities are

seen as credible sources of information (Goldsmith, Lafferty, & Newell, 2000) and the credibility of a celebrity is described as the total amount of positive features that create and increase the acceptation of the message (Erdogan, 1999). Credibility is one of the most important determinants of celebrity endorsement. Credibility is particularly important when people have a negative attitude towards the brand and powerful arguments are needed to inhibit the counter arguing and positively influence the attitude towards the brand. Consequently, when celebrities are credible, it affects the acceptance of the message and the persuasion (G. E. Belch & M. A. Belch, 2008).

Personality

The celebrity-persona parasocial identification scale (CPI) is designed to measure how media consumers develop identification with celebrities or popular fictional characters. Identification is defined as a persuasion process that occurs when an individual adopts the behavior or attitudes of another individual or group based on a self-defining relationship (Kelman, 1961, p. 63). Identification is a psychological orientation through which individuals define themselves based on their group membership and derive "strength and a sense of identity" from the affiliation (Kelman, 1961, p. 64). Identification is a fundamental process of social change that has been discussed by several important theorists and social scientists. Freud (1922, p. 29) defined identification as "the earliest expression of an emotional tie with another person." Lasswell (1965) also discussed the concept, referring to mass identifications such as nationalism. W. L. Johnson and A. B. Johnson (1995) traced the concept of identification to both Freud (1922) and Lasswell (1965).

Attractiveness

The concept of attractiveness does not only entail the physical attractiveness. Attractiveness also entails concepts such as intellectual skills, personality properties, way of living, athletic performances, and skills of endorsers (Erdogan, 1999). Celebrities can be attractive because they established for example great sport performances and people have great respect for their achievement and therefore they are attracted to them. Physical attractiveness suggests that a celebrity determines the effectiveness of persuasion as a result of that consumers want to be like the endorser and want to identify themselves with that endorser (Cohen & Golden, 1972). In addition, there are examples of celebrities who are considered less attractive, but do represent the image the company wants to create and have. When the match-up between brand and celebrity is present, attractiveness becomes less important and therefore the company might choose a less attractive celebrity. There are huge numbers of physical attractive celebrities who endorse a product. An example is David Beckham for the Armani brand. The majority of people are attracted by David Beckham. Men want to be associated with the soccer player and fashion man David Beckham, while woman are physically attracted by his appearance because David Beckham always looks fashionable and has great athletic performances. He is extremely credible and attractive and has a high degree of similarity; people want to be like him.

Expertise

Expertise of celebrity endorsement is being defined as "the extent to which an endorser is perceived to be a source of valid assertions" (Erdogan, 1999, p. 298). With regard to expertise, it is not important that the celebrity is really an expert in the field. It is important that consumers think and believe a celebrity has expertise (Ohanian, 1991).

To illustrate, in a selling context, an expert salesperson caused a significantly higher number of customers to purchase a product than the non-expert salesperson did (Woodside & Davenport, 1974). Expert sources also

influence perceptions of the product's quality. The source or celebrity that is a specialist has been found to be more persuasive (Aaker, 1997) and generates more purchase intentions (Ohanian, 1991). Furthermore, Speck, Schumann, and Thompson (1988) stated that celebrities, who are seen as an expert in a specific area, engender a higher brand recognition than celebrities who are seen as non-experts. The level of celebrity expertise will determine its effectiveness (Amos et al., 2008). The more expertise a celebrity has, the more effective it will be. The expertise of a celebrity will not be changed by negative publicity, but the believability and credibility will be negatively influenced.

Consumer Buying Intention

According to H. H. Friedman and L. Friedman (1979), "a celebrity endorser is an individual who is known by the public for his or her achievements in areas other than that of the product class endorsed". Compared to other endorser types, famous people always attach a greater degree of attention, recall, and loyalty.

According to Melissa St. James, a doctoral fellow and marketing instructor at The George Washington University, "Studies show that using celebrities can increase consumers' awareness of the ad, capture (their) attention and make ads more memorable". Diverse literature is available on celebrity endorsement.

Klebba and Unger (1983) used multiple regression analyses to examine the impact of positive and negative source information on the credibility of the advertising source and on audience perceptions of the company and advocated product. The results of their study indicate that the cognitive and affective dimensions of credibility are influenced differently by negative information.

Wenqian Gan (2006) explored the Chinese consumer's behaviors toward celebrity and non-celebrity commercials. The results show that Chinese consumers prefer celebrity commercial and respondents collectively like celebrity who have more professional career skill, even though there are other different reasons existing such as good appearances, good disposition, and good career spirit.

Hunter and Davidsson (2008) studied negative information's impact on celebrity entrepreneurship. There results show that negative information about the celebrity might lead to negative attitude towards the new venture and promotion, new ventures can potentially reduce damage to their brand by distancing themselves from the celebrity, however, such a maneuver may not be as effective when the new venture is run by a celebrity entrepreneur.

Schlecht (2003) examined the relationship between celebrity endorsements and brands, by applying a selection of widely accepted principles of how consumers' brand attitudes and preferences, it can be positively influenced. Thereby, the concepts of source credibility and attractiveness, the match-up hypothesis, the meaning transfer model, and the principles of multiple product and celebrity endorsement were used. A brief assessment of the current market situation indicates that celebrity endorsement advertising strategies can under the right circumstances indeed justify the high costs associated with this form of advertising. Several failures show, it is essential for advertisers to be aware of the complex processes underlying celebrity endorsement.

Khatri (2006) studied celebrity endorsement as strategic promotion. An assessment of current market situation indicated that celebrity endorsement and advertising strategies, if correctly blended in terms of marrying the strengths of the brands with the celebrity's quality, indeed justify the high cost associated with this form of advertising. However, advertising needs to be aware of the complex processing underlying celebrity processing endorsement by gaining clarity on described concepts of celebrity source creditability and attractiveness, match-up hypothesis, multiple product endorsement, etc. Marketer has to decide how far the

benefits outweigh the risks associated. Advertisers agree that celebrity endorsement does not itself guarantee sales. It can create a buzz and make a consumer feel better about the product, which in turn has to come to expectation of customers as a real star by delivering the promise (Weerasiri & Wanninayaka, 2016). There have been instances where the endorsement or real consumer has started working better than celebrity endorsers. In fact, many researches need to be done on customer testimonials, which tends to induce better creditability and helps in carving the competent, rational, and knowledgeable customer of today who is said to be the real hero.

Money, Shimp, and Sakano (2006) studied the impact of negative information of celebrity on brand. They conducted comparative study in the US and Japan to investigate whether the form of negative information about a celebrity (other- or self-oriented) results in differential evaluations of the brand endorsed by the celebrity. Surprisingly, the authors find that both Japanese and Americans view endorsed products more positively in the presence of self-oriented negative information, a possible suspension of the famous fundamental attribution error in human judgment.

Escalas and Bettman (2010) studied consumers appropriate brand symbolism that comes from celebrity endorsement to construct and communicate their self-concepts. Study 1 finds that celebrity endorsement enhances self-brand connections when consumers aspire to be like the celebrity, but harms them when consumers do not; this effect is more pronounced when the brand image is congruent with the celebrity's image. This effect is further moderated by the degree to which a brand communicates something about the user, with more symbolic brands having stronger effects than less symbolic brands. Study 2 finds that the effect of celebrity endorsement on self-brand connections is augmented when consumers' self-esteem is threatened. Consumers self-enhance by building connections to favorable celebrity images or distancing themselves from unfavorable celebrity images.

Silvera and Austad (2004) examined the characteristics of advertisements that make them effective are especially valuable. The present experiments represent a first step in identifying what makes endorsement advertisements effective based on work in attribution theory within social psychology. The results suggest that endorsement advertising effectiveness can be strongly influenced by consumers' inferences concerning whether the endorser truly likes the product. Advertisers often appear to be satisfied with merely creating an association between a popular endorser and their product with the hope that the endorser's positive image will somehow "rub off" on the product. The present research suggests that advertisers should put more effort not only into choosing endorsers who are well match with products, but also into making strong arguments and believable explanations for why endorsers truly do like the products they endorse.

Mukherjee (2009) analyzed the impact of celebrity endorsements on brands. Objective of this article is to examine the relationship between celebrity endorsements and brands, and the impact of celebrity endorsement on consumer's buying behavior as well as how consumer makes brand preferences. This paper proposes a 20 points' model which can be used as blue-print criteria and can be used by brand managers for selecting celebrities and capitalizing the celebrity resource through 360 degree brand communication which, according to this paper, is the foundation of the impact of celebrity endorsement. Celebrity endorsement is always a two-edged sword and it has a number of positives—if properly matched, it can do wonders for the company; and if not, it may produce a bad image of the company and its brand.

The "meaning" of a brand resides in the minds of consumers, based on what they have learned, felt, seen, and heard overtime. This study explores the relationship between quality and image with special attention on brands plagued with negative impressions, including instances where consumers' perceptions of a product's

quality conflict with its perceived "image". Data confirm that quality and image impact attitudes in a distinct manner, and overall, low brand image is more damaging than low quality. In addition, findings show that: (1) hedonic attitudes towards brands are most driven by image, whereas utilitarian attitude formation/change processes are dominated by quality, (2) non-attribute brand beliefs are a stronger predictor of hedonic attitudes when quality or image is low versus high, while (3) attribute-based beliefs are strong predictors of utilitarian attitudes across image and quality levels.

Saleem (2007) has clarified celebrity endorsement that is becoming very prominent in nowaday. Marketers use celebrities in ads when there is no or very little product differentiation. When marketers have to target more diverse market multiple celebrities endorsement (more than one celebrity in a single ad), there could be an answer. The purpose of the current study is to explore the perceptual difference of young adult toward single celebrity ads and multiple celebrities' ads. Questionnaires were administered on a sample of 300 university students to asses if there is any difference in young adult's perception about single celebrity endorsement and multiple celebrities' endorsement. Four print media ads, two containing one celebrity in them and two containing three and five celebrities in them, were used as a stimulus. The results showed that the attitude toward ad and purchase intentions are more positive for multiple celebrities ads compare to single celebrity ads and there is no significant difference in the attitude toward brand for multiple celebrities ads and single celebrity ads.

Theories

This section presents the theories behind this study. The theories used will be Kelman's Model of Source Characteristics, The ABC Model of Attitudes, and Hierarchy of Effects.

Motivation of Chosen Theories

This study aims to examine consumers' attitude towards celebrity endorsed fragrances in comparison to premium fragrance brands. Considering the fact that the perspective viewed upon in this study is a consumer oriented one, it is of interest to bring up a consumer behavior model such as The ABC Model of Attitudes and Hierarchy of Effects. This is necessary to get a deeper understanding of perfume consumers attitude formation and behavior. The other model presented, Kelman's Model of Source Characteristics, will give a deeper understanding of how a celebrity can have influence on perfume consumers' attitudes and behavior.

Kelman's Model of Source Characteristics

There is a full description of Kelman's model of source characteristics. According to the source characteristics model, different words uttered or written by different sources can have different outcomes. The source of the message can have a big impact on the likelihood of the message being accepted. The choice of a source to maximize attitude change can tap into different dimensions. The source can be chosen because he or she is an attractive, famous, expert or even a regular consumer who is pleasant and trustworthy. There should be a match between the needs of the receiver and the potential rewards offered by the source. When this match occurs, the receiver is more motivated to accept the message. A positive source can help to reduce risk and increase message acceptance overall. Two source characteristics of importance are credibility and attractiveness. Each characteristic of the source has some kind of influences on attitudinal or behavioral change in a consumer.

Source Credibility

Source credibility refers to a source's perceived, objectivity expertise, or trustworthiness. This relates to the consumers' beliefs that a communicator is competent, and she or he is willing to provide the necessary

information to adequately evaluate competing products. A source that is credible can be particularly persuasive when the consumer has not yet learned much about merchandise or formed an attitude of it. Credibility can be enhanced if the source's credentials are perceived as somehow applicable to the product being endorsed. This association can overcome other objections people may have to the endorser or the product.

Source Attractiveness

Source attractiveness relates to the source's perceived social value. This quality can originate from the persons physical appearance, social status personality, or his or her similarity to the receiver. A persuasive source has great value and endorsement deals are continuous in the works. A physically attractive source has a tendency to facilitate attitude change. His or her extent of attractiveness puts forth modest effects on consumers purchase intentions. Beauty can also work as a source of information. An attractive representative or spokesperson is an effective source when the merchandise is related to attractiveness.

The ABC Model of Attitudes and Hierarchy of Effects

Solomon (2002) described the ABC model of attitudes as a multidimensional perspective stating that attitudes are jointly defined by affect, behavior, and cognition. Affect refers to the way a consumer feels about an attitude object. Behavior involves the person's intentions to an attitude object. Cognition refers to the beliefs a consumer has about an attitude object. This model emphasizes the interrelations among knowing (cognition), feeling (affect), and doing (behavior). All three components of an attitude are important, but their relative importance will vary depending on a consumers' level of motivation with regard to the attitude object. The concept hierarchy of effects explains the relative impact of the three components. Each hierarchy specifies that a fixed sequence of steps occurs en route to an attitude.

Conceptualization and Operationalization

    Conceptual framework.

Celebrity endorser   consumer buying intention

Likability

Credibility

Personality
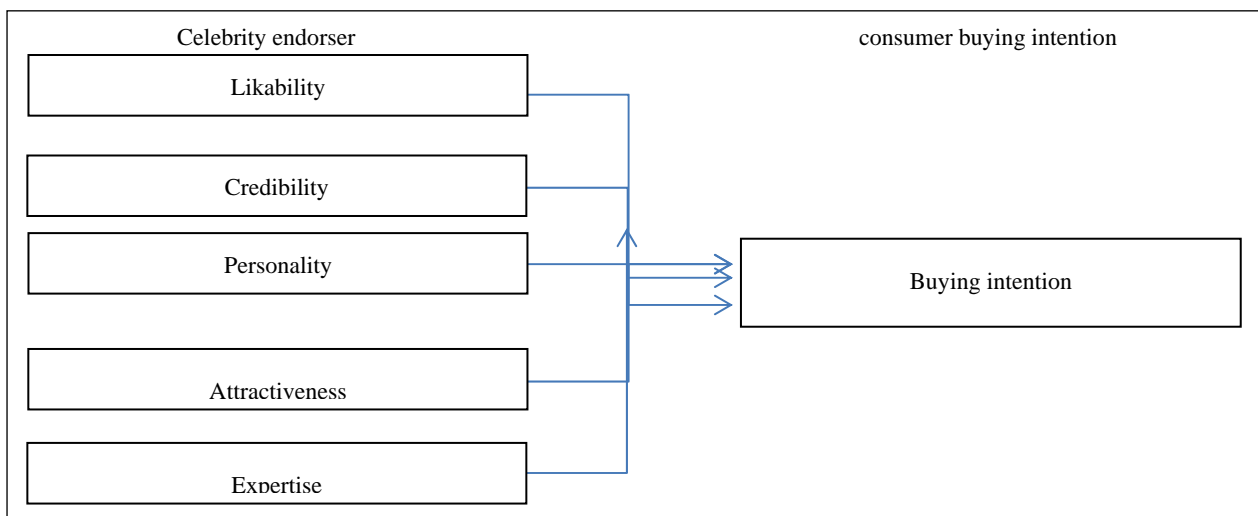
Attractiveness

Expertise

Buying intention

Figure 1. Conceptual Framework.

Hypotheses

Based on the literature review, basic dependent variables were identified (Figure 1). likability (McGuire, 1985, p. 239; G. E. Belch & M. A. Belch, 2008; Kahle & Homer, 1985), credibility (G. E. Belch & M. A. Belch, 2008, p. 189; Hovland & Weiss, 1953; Goldsmith et al., 2000; Erdogan, 1999), personality (Kelman, 1961, p.

63; Freud, 1922, p. 29; Lasswell, 1965; W. L. Johnson & A. B. Johnson, 1995), attractiveness (Erdogan, 1999; Cohen & Golden, 1972), and expertise (Erdogan, 1999, p. 298; Ohanian, 1991; Woodside & Davenport, 1974; Aaker, 1997; Ohanian, 1991; Speck et al., 1988; Amos et al., 2008). Hence, the hypotheses as follows were created and formulated based on these literatures.

Hypothesis 1: The celebrity endorser's perceived likability will positively influence purchase intention for consumers.

Hypothesis 2: The celebrity endorser's perceived credibility will positively influence purchase intention for consumers.

Hypothesis 3: The celebrity endorser's perceived personality will positively influence purchase intention for consumers.

Hypothesis 4: The celebrity endorser's perceived attractiveness will positively influence purchase intention for consumers.

Hypothesis 5: The celebrity endorser's perceived expertise will positively influence purchase intention for consumers.

Operationalization

The concept of this study is defined and discussed in the literature review. In addition, the researcher paid attention to the previous work that has been done on this concept. With the help of these opinions and views as well as the research findings, the researcher identified key variables which mostly affect the consumer behavior as a result of introducing celebrity in the advertisements. Based on this information, the operationalization process was done. In this context, the researchers try to identify indicators of research variables and their measurement criteria.

Table 1

Operationalization and Variables

Variable	Indicator	Measurement
Likability	-Pleasing -Affection -Veracity -Believable	Consumer's attitude of whether the celebrity has the power of satisfaction. Consumer's attitude of whether the celebrity has the power of strong feelings/emotions. Consumer's attitude of whether the celebrity has the power of conveying the truth. Consumer's attitude of whether the celebrity is believable.
Credibility	-Confidence -Honest -Sincerity -Strength	Consumer's attitude about confidence of the celebrity. Consumer's attitude of whether the celebrity is honest. Consumer's attitude on the sincerity of the celebrity. Consumer's attitude about moral courage of celebrity.
Personality	-Courage -Good look -Know-how -Skill	Consumer's attitude whether the celebrity has moral courage. Consumer's attitude whether the celebrity outlook. Consumer's attitudes whether the celebrity is technically sound. Consumer's attitude whether the celebrity can use his or her knowledge effectively in its specialized area.
Attractiveness	-Appearance -Desire -Attention -Interest	Consumer's attitude of the celebrity's external outlook. Consumer's attitude of whether he or she prefer to the celebrity. Consumer's attitude of celebrity's ability to hold the attention. Consumer's attitude whether interest or not the celebrity character.
Expertise	-Knowledge -Experience -Authority -Training	Consumer's attitude whether the celebrity has practical knowledge on his or her specialized area. Whether the celebrity has sufficient experience in his or her field or area. Consumer's attitude whether the celebrity has power to influence others action or behavior. Consumer's attitude whether the celebrity has obtained a practical training relevant to his or her field.

Consumer Buying Intention

Table 2

Consumer Buying Intention

Variable	Indicator	Measurement
Consumer buying intention	Selecting	Consumer's attitude of whether the celebrity can help him or her to select good or services.
	Purchasing	Consumer's attitude of whether the celebrity can influence the consumer's purchasing intention.
	Using	Consumer's attitude of whether the celebrity influenced him or her to use good and service.
	Evaluating	Consumer's attitude of whether the celebrity can help him or her to evaluate products.
	Disposing	Whether consumer has disposed products according to the celebrities' opinions.

Methodology

Field of the Research and Sample

This research used quantitative methodology. In the quantitative methodology, basically, the authors use a survey study which uses questionnaire for the data collection.

Study field is both television commercial and buying behavior. In this, for the survey, it used 100 questionnaires covering university undergraduates and the executive level professionals in the Gampaha and Colombo districts. Method of convenient sampling is used for this survey.

Research Approach

As the objective of this study is to explore the attitudes and purchasing intention of perfume consumers, a quantitative approach is utilized. A quantitative research is utilized to measure a particular phenomenon, so they can be transformed to numbers. Quantitative research examines numerical relations between two or more measurable qualities. Such an approach is usually associated with large-scale studies and is related to the objectivity of the researcher. Quantitative research on the other hand relies on transforming the observed phenomena to written words instead of numbers. A combination of a holistic perspective and specific perspective is ideal in this study in order to measure the respondents purchasing intention and understanding their attitudes. A combinational approach (triangulation) views a phenomenon through different perspectives and in a sense leads to higher accurate results. Results attained through the use of the two approaches give a more comprehensive coverage of a research problem.

Research Strategy

With regards to the research approach, a questionnaire is conducted for a quantitative collection of data. A case study is excluded considering the fact that a case study focuses on individual instances rather than wider spectrums. An experiment and observation are also excluded because of the lack of time and resources.

Classification of Data Used

Primary data. Questionnaires are designed to collect information that is used subsequently as data for analysis. The questionnaire in use consists of a number of relevant questions about the respondents' attitudes and consumer's behavior. The questionnaire is semi-structured, and has a combination of closed and open questions. The arrangement of the questionnaire consists of three parts. Part A measures consumer's behavior regarding perfume. Part B measures consumer's attitudes regarding perfumes, and part C measures brand preference (celebrity brands vs. premium brands).

A sample of 100 was chosen and information was collected through means of convenience. The survey

was aimed at males under the age of 25 to 35. It was therefore performed at university students and executive level targeted group. The face-to-face method was used to achieve a higher rate of response. A sent out questionnaire could have been utilized, but the time of the study is limited and the side-effect is a low rate of response.

Secondary data. Secondary data is information that has been previously gathered for some purposes other than the current research project. A large proportion of the data used in this study are classified as secondary data because of the wide availability and applicability of it. To a great extent, information was gathered from research journals, books, the internet, and research articles. With regards to the growth of the internet usage, a lot of the data collected were extensively available in electronic format.

Reliability and Validity

Reliability. Reliability is often referred to a measurement that is stable and has not been exposed to coincidental influences. The research instrument should produce the same data whether it is done today or re-done at another time point.

Validity. The term validity often refers to the relevance of the data in relation to the research phenomena. The research instrument used as a measurement of phenomena should measure exactly what it means to measure. In a sense, a high validity means that the data and methods are right and relevant.

Data Analysis

The Survey and Data

The questionnaire was circulated among 100 respondents selected from Colombo and Gampaha in order to gather data on the nature of influence of the consumer buying intention in relation to celebrity endorsement.

Analysis the Data

Analysis of consumer buying intention. Consumer buying intention towards celebrity endorsement and the variables of consumer buying intention are discussed here. There are selecting, purchasing, using, evaluating, and disposing. Frequencies of decisions and their percentages for each variable according to various categories are presented.

The Influence of Consumer Buying Intention

According to the first objective of this study, whether the celebrity endorsement can influence the consumer buying intention, the buying intention was measured using the frequency of selecting, purchasing, using, evaluating, and disposing. The responses from consumer buying intention on this matter were obtained from respective questions.

The Variables of Consumer Buying Intention

The second objective of this study is to find out the most influential decision of consumers among selecting, purchasing, using, evaluating, and disposing with regard to celebrity endorsement advertising. In order to find out the most influential decision, the respondents who are strongly influenced by celebrity endorsement advertising and the respondents who are moderately influenced are taken into consideration.

As shown in Table 3 and Figure 2, the age group of 18-22 is the maximum representation of this survey study, while Black Knight has been the most popular perfume brand in all most all the subjects' choice. Adidas has been the second most interested perfume brand when Pro Sport has been the next popular brand in this study.

Table 3

Age Group

| Age * Which perfume/perfumes brand do you recall when you buying of the given time period? Cross-tabulation										
Count										
	Which perfume/perfumes brand do you recall when you buying of the given time period?									Total
	Black Knight	Play boy	Polo	Calvin Klein	Armani Code	Adidas	Hugo boss	Blue	Pro sport	other	
18-22	15	0	0	0	0	4	0	1	2	5	27
23-28	11	1	0	1	1	4	1	1	2	8	30
29-34	6	2	1	2	1	2	0	0	3	6	23
Above 35	8	1	0	0	1	4	1	2	1	2	20
Total	40	4	1	3	3	14	2	4	8	21	100

Source: survey data 2014.
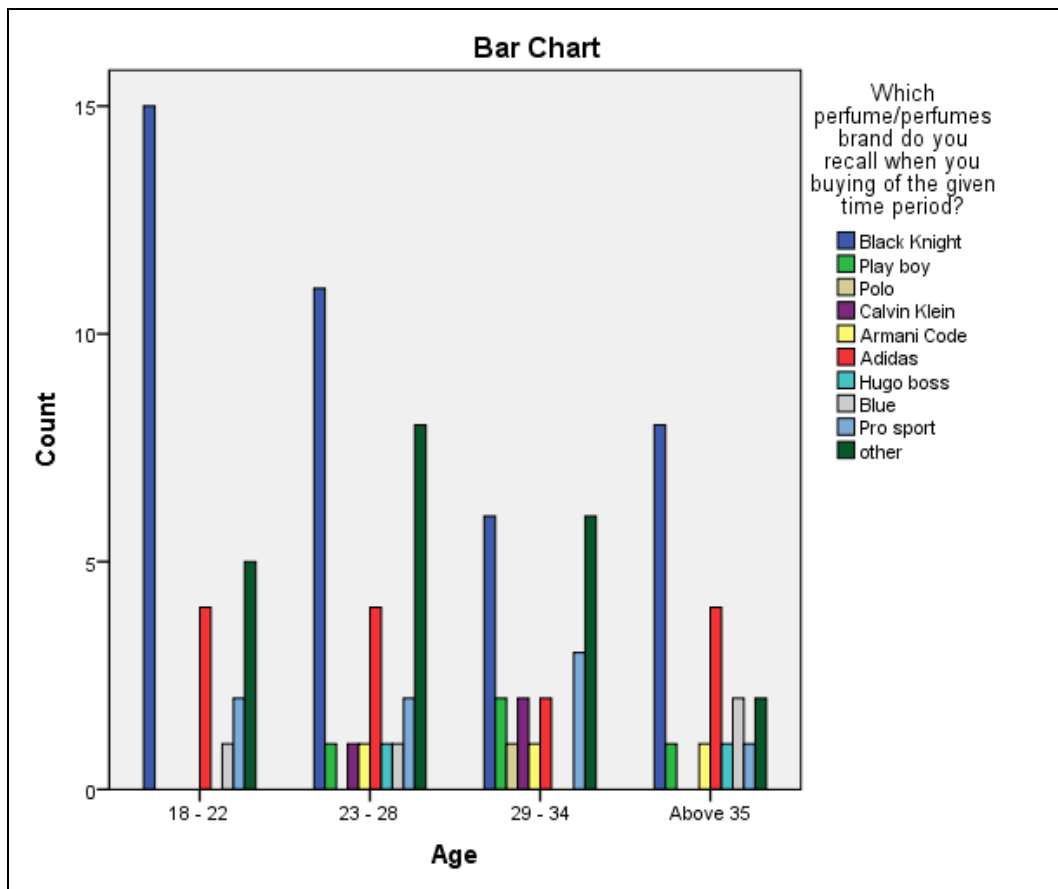
Figure 2. Age group. Source: survey data 2014.

When it comes to the occupation (Figure 3 and Table 4) and how this factor relate to the choice of perfume with the celebrity influence, the students who aged between 18-22 have the highest rate of interest with the celebrity influence in their perfume purchasing, while executives and professionals place respectively.
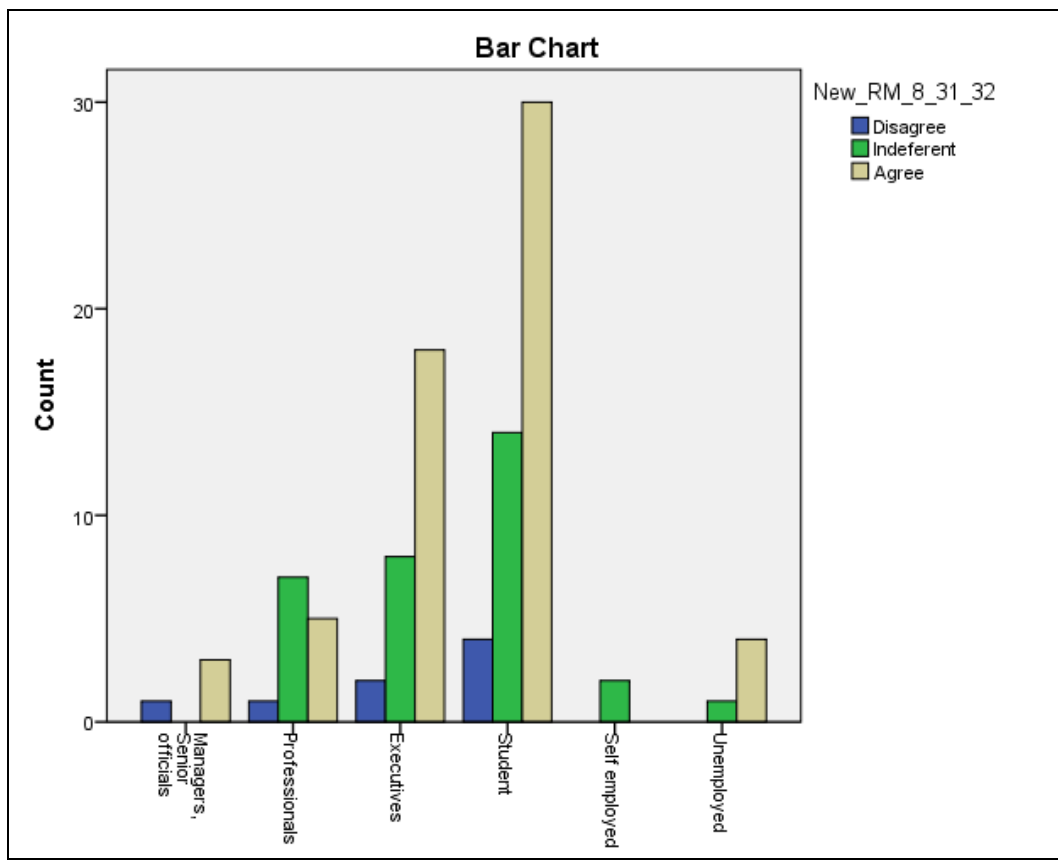
Figure 3. Occupation, celebrity and influence. Source: survey data 2014.

Table 4

Occupation, Celebrity, and Influence

		\multicolumn{3}{c}{New_RM_8_31_32}	Total
Occupational group * New_RM_8_31_32 crosstabulation				
Count				
		Disagree	Indeferent	Agree	
	Managers, senior officials	1	0	3	4
	Professionals	1	7	5	13
	Executives	2	8	18	28
Occupational group	Student	4	14	30	48
	Self employed	0	2	0	2
	Unemployed	0	1	4	5
Total		8	32	60	100

Source: survey data 2014.

Degree and other professional qualification have been the significant educational qualifications in this sample while they have expressed that celebrity endorsement in the perfume brands influences their perfume buying behavior.
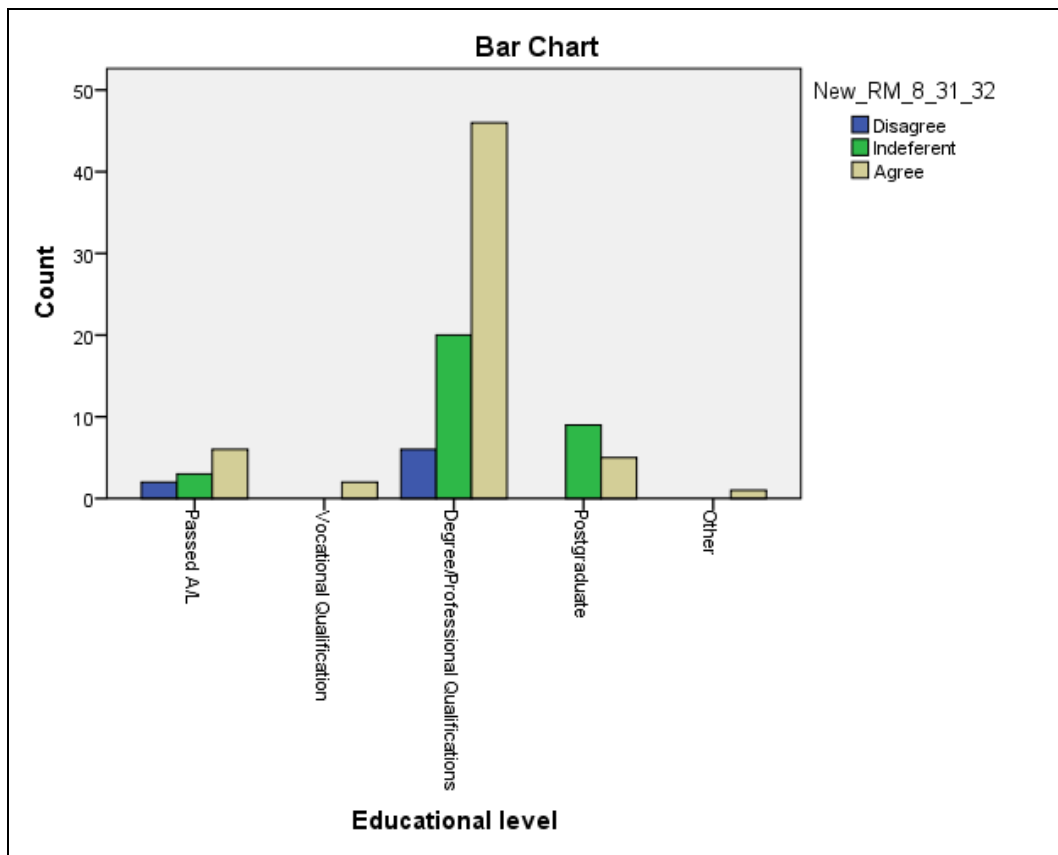
Figure 4. Educational level, celebrity and influence. Source: survey data 2014.

Table 5

Educational Level, Celebrity, and Influence

		Educational level * New_RM_8_31_32 crosstabulation			
		Count			
		New_RM_8_31_32			Total
		Disagree	Indifferent	Agree	
	Passed A/L	2	3	6	11
	Vocational qualification	0	0	2	2
Educational level	Degree/Professional qualifications	6	20	46	72
	Postgraduate	0	9	5	14
	Other	0	0	1	1
Total		8	32	60	100

Source: survey data 2014.

According to the data analyzed (Figure 5), smell is the most important fact that influences subjects' buying behavior when commercial advertisement can be another factor in motivation. And their personal interesting has also another factor in this.

Moreover, following Figure 6 communicates the way respondents reveal their personal ideas referring to the above factors in the hypotheses.
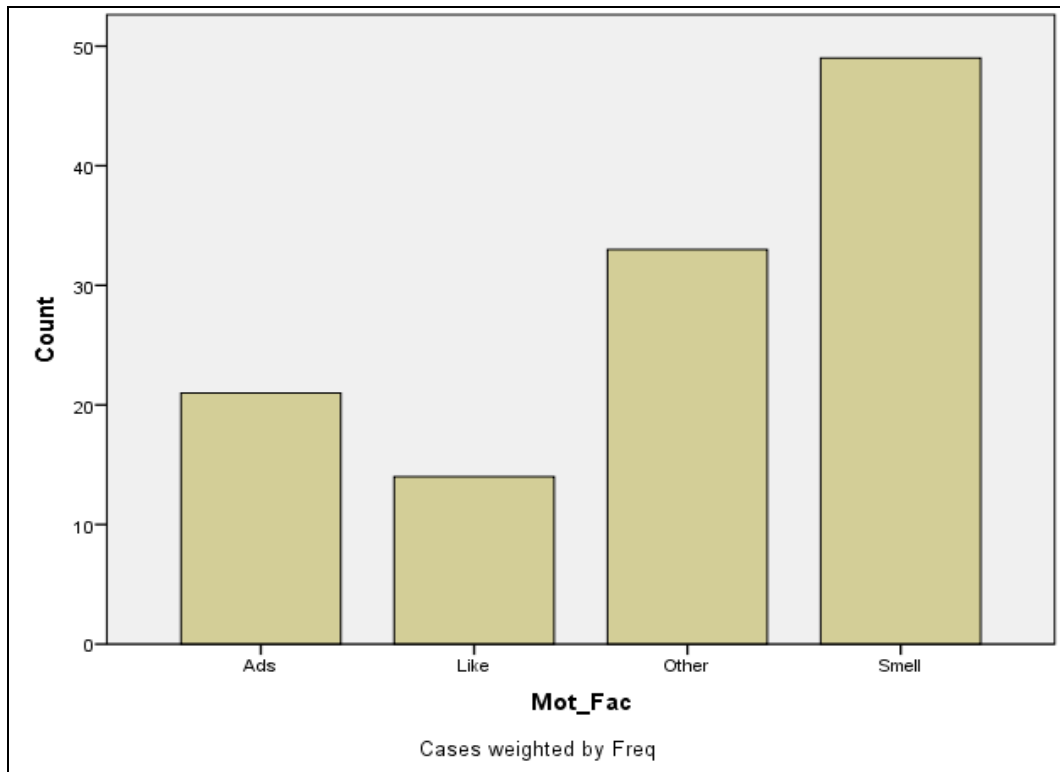
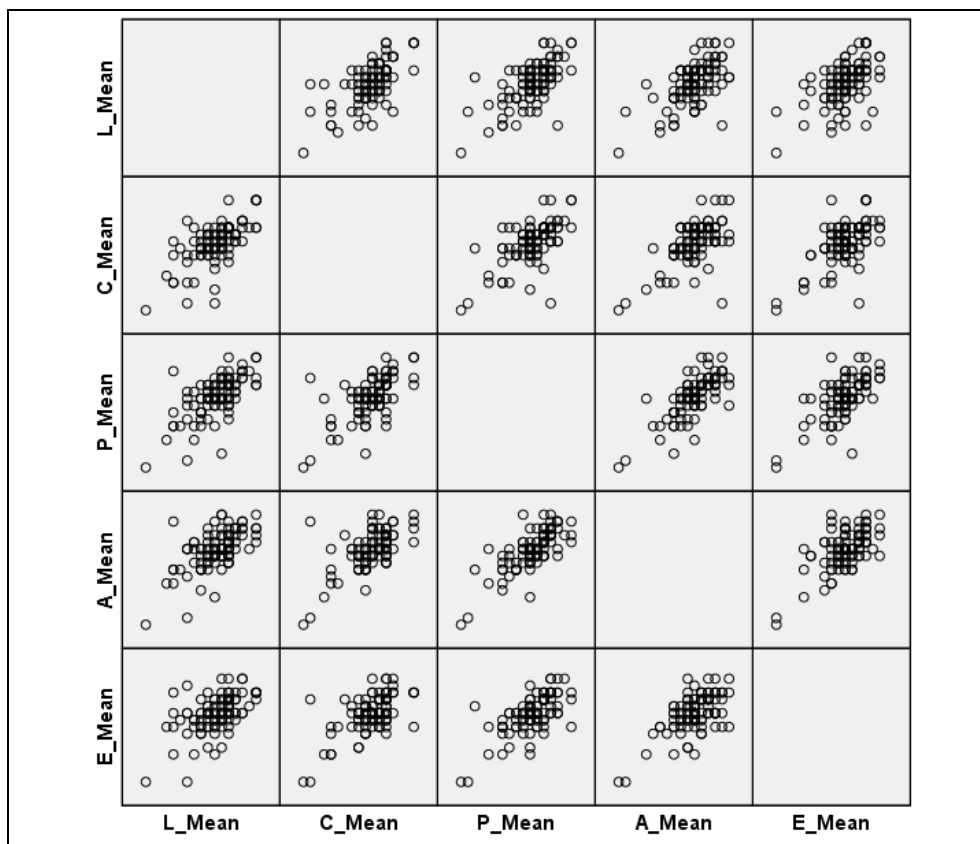*Figure 5.* Perfume purchase and motivation. Source: survey data 2014.

Figure 6. Characteristics of celebrity endorsement; likability, credibility, personality, attractiveness and expertise.

Table 6

Characteristics of Celebrity Endorsement: Likability, Credibility, Personality, Attractiveness, and Expertise

		L_RMean	C_RMean	P_RMean	A_RMean	E_RMean
	Correlations					
	Pearson correlation	1	0.550**	0.557**	0.542**	0.446**
L_RMean	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	100	100	100	100	100
	Pearson correlation	0.550**	1	0.594**	0.609**	0.533**
C_RMean	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	100	100	100	100	100
	Pearson correlation	0.557**	0.594**	1	0.629**	0.568**
P_RMean	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	100	100	100	100	100
	Pearson correlation	0.542**	0.609**	0.629**	1	0.537**
A_RMean	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	100	100	100	100	100
	Pearson correlation	0.446**	0.533**	0.568**	0.537**	1
E_RMean	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	100	100	100	100	100

Note. ** Correlation is significant at the 0.01 level (2-tailed). Source: survey data 2014.

Hypotheses

Hypothesis 1: The celebrity endorser's perceived likability will positively influence purchase intention for consumers.

Hypothesis 2: The celebrity endorser's perceived credibility will positively influence purchase intention for consumers.

Hypothesis 3: The celebrity endorser's perceived personality will positively influence purchase intention for consumers.

Hypothesis 4: The celebrity endorser's perceived attractiveness will positively influence purchase intention for consumers.

Hypothesis 5: The celebrity endorser's perceived expertise will positively influence purchase intention for consumers.

In the data analysis related to above hypotheses, it was revealed that the likability to the celebrity used in the perfume brand is highly significant in the perfume buying intention. However, the other factors of familiar face and life style of the celebrity used in the perfume brand has not been significant in this research study.

Conclusion and Recommendation

Conclusion

This research identified factors from the influence of the consumer buying intention in relation to celebrity endorsement advertising in Sri Lanka. The study was limited to the TV advertisements.

Based on theoretical background and literature as well as the assumptions made by the researcher, the study formulated the conceptual frame work. In this process, only five attributes of celebrities were taken into consideration. These five attributes are likability, credibility, personality, attractiveness, and expertise. From the conceptual model, the researcher attempted to build a relationship between the celebrity endorsement and the

consumer buying intention. The celebrity endorsers were considered as independent variable and the consumer buying intention was the considered as the dependent variable.

The researcher hypothesized that there is a relationship between the celebrity and the consumer buying intention. Further, this relationship can vary according to the core components of the independent variable. Under the indicators measurement, criteria were developed to identify the research variables. The study tested five hypotheses based on the independent variable and its core components to examine the influence of the consumer buying intention.

The data were collected through structured questionnaire. A sample of 100 respondents was selected for the survey from Colombo and Gampaha. The respondents were selected according to the random sampling method.

In the data analysis related to above hypotheses, it was revealed that the likability to the celebrity used in the perfume brand highly significant in the perfume buying intention. However, the other factors of familiar face and life style of the celebrity used in the perfume brand have not been significant in this research study.

Recommendation

The research examined celebrity endorsement on the basis of five determinants. It could be interesting to elaborate more on one of these indirect determinants, in order to obtain a broader foundation of knowledge with respect to the celebrity endorsement. Additionally, incorporating the above mentioned distinctions could provide other insights in this field of knowledge. It could, for example, be the case that specific determinants of celebrity endorsement generate consumer's buying intention more than others.

The consumers can recall the advertisements because of the attractiveness of the celebrities. If the marketers want to keep the advertisement in the consumer's mind the attractive celebrity is more effective.

The influence of consumer buying intention behavior can be changed according to the type of celebrity as well as the product category.

The attractive celebrity is more effective for impulsive goods.

The celebrity used in advertisements should have following attributes and qualifications in order to yield effective results. He or she:

(1) should have knowledge about the advertised product;

(2) should use the product;

(3) should have good image;

(4) should have presentation skills;

(5) should be relevant to the product.

Areas for Further Research

This study emphasizes the need that future researchers should pay more attention on this field. This is an interesting field for researchers; however, it has been neglected by Sri Lankan researchers.

(1) Future research could also take into account issues like: celebrity overshadowing, overexposure, overuse, and extinction of the celebrity endorser.

(2) Negative impact of celebrity endorsement.

(3) This study focused only on celebrities' five attributes, i.e. likability, credibility, personality, attractiveness, and expertise. More studies are necessary for other attributes such as popularity, talented, similarity, familiarity, and match-up congruence.

(4) Only TV advertisements were selected for this study. Another study can examine the influence of consumer buying intention in relation to celebrity advertising for other media.

This study did not examine influence of consumer buying intention according to the consumer's demographic factors. Further research must be needed to find out the relationship between the influence of consumer buying intention and demographic factors in relation to celebrity endorsement.

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HRM, Organizational Psychology and Personnel Psychology: Linear and Simplex Analysis of HR

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Resarch topic of paper is lienar and simplex analysis in human resource management field. Research questions are quantitative models may increase effeciency of HR professionals, and mission of HRM field is to develop positive organizational psychology in employees. Organizational psychology is important research field in British academy. Further, simplex methodolohy is presented by G. B. Dantzig after World War II in order to solve linear programming. First of all, goal function is established in simplex, which is to maximize firm performance in this paper. Secondly, limits of problem are determined. Main limits in applying HRM in organizations might be HR professionals and top management. For example, SHRM (Society for Human Resource Management) of USA organizes programs for increading competency of HR professionals. Further, top management may impede on effectively applying HRM in organizations. Therefore, both of them may establish limits of simplex function. Research methods of study cover in-depth literature review in HRM field, and study has qualitative research dimension. Data analysis reveals that HRM may consist of three figures: they are individual performance, talent management, and organizational psychology. To conclude, HRM is appled in organizations to develop individual performance, talent management, and organizational psychology.

Keywords: renaissance, scientific revolution, HRM, theory, HR professionals, performance

Introduction

There are three eras in EU history: 15th century, 17th century, and 19th century. It witnessed renaissance in 15th century and witnessed scientific revolution in 17th century. Most probably, Renaissance Movements resulted in scientific revolution in 17th century. EU encouraged industrial revolution during 19th century. Thus, scientific revolution encouraged Industrial Revolution in 19th century. Chronology might be: renaissance, science, and industry. In addition, industrial and scientific revolution encouraged democracy in Europe as it appeared in 1789 in France.

Most recent topic for HRM might become "task performance". Because organizations consist of many organizational tasks. Task performance is related with competency and strategic human resource management. For example, SHRM, USA, increases competency of HR professionals. Americans call competency and task as human capital. For competence and task performance, employees must have theoretical knowledge, and they need to gain experience timely at work. Because if task performance of employees is higher, performance of

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their departmant increases. So, all departments come together, and have an impact on organizational performance. This is related with strategic human resource management (strategic HRM). Strategic HRM is maybe related with individual performance—firm performance relationship. If employees have high individual performance (task performance), firm performance may increase through department's performance. Therefore, HRM aims to increase task performance of employees.

Simplex is introduced by Dantzig in 1947. It is used for solving linear programs. In linear, there is only goal function, maximization, or minimization. For simplex, limits are included in problem solving.

Theory

HRM is maybe explained in organizations with individual performance, talent management, and organizational psychology (or personnel psychology). Objective of HRM might be to increase individual performance at work (that policy may be named as task performance policy). Therefore, goal function is set through HRM practices, talent management, and organizational psychology. Assumption is that organizations apply HRM practices to increase individual performance. Goal (Z) is to increase firm performance. Therefore, HRM may be figured with three dimension: performance, talent management, and organizational psychology.

Research Methods

Findikci (2012) studied for behavioral sciences in academy. Further, Ulucan (2007) mentioned for quantitative models in firm's operations. In-depth literature review was implemented for this study. Quantitative methods began in business in 1920s by linear programming, and it is strenghtened after World War II such as presentation of program evaluationand review technic (PERT), critical path method (CPM) technics, and simplex analysis. Industrial Revolution started in Europe during 19th century, it may be described with factory production, and USA becomes frontier in industry after the World War II.

Research Results: Linear and Simplex of HR

Main result of this study is that quantitative methods may be applied for HRM and other fields in business. For example, Uysal (2014; 2015) applied simplex methods for talent management, and applied decision tree analysis for human resource management practices.

Therefore, goal function of linear programming might be:
$$Goal\ (Z) = (2HRM1 + 2HRM2 + 2HRM3 + HRM4) + 1/4\ talent\ management\ (TM) +$$
$$organizational\ psychology\ (OP)$$

so:
$$goal\ (Z) = 2HRM + 1/4TM + OP$$

In this goal function, goal (Z) is to heighten firm performance; and HRM = HRM practices, TM = Talent Management, and OP = Organizational Psychology. Assumption of study is that HRM practices and talent management and organizational psychology have an impact on firm performance. Continued, 2, 1/4, and 1 are coefficients of variables. HRM1, HRM2, HRM3, and HRM4 represent HRM practices applied in organizations.

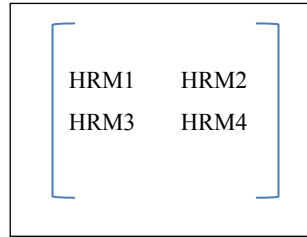Secondly, a firm may establish matrice structure of HRM. Matrix includes variables as HRM practices (Figure 1):

$$\begin{bmatrix} \text{HRM1} & \text{HRM2} \\ \text{HRM3} & \text{HRM4} \end{bmatrix}$$

Figure 1. HR matrix.

In this HRM matrice, assumption, HRM1 = staffing, HRM2 = training, HRM3 = compensation, and HRM4 = performance appraisal.

In matrix structure, it is important to determine determinant for effectiveness. Objective of HRM is to achieve firm performance. Determinant of matrix may be performance appraisal. Because performance appraisal determines top performers and talents (i.e., stars employees).

Thirdly, limits of simplex fuction are: $X1$ = HR professionals, and $X2$ = Top Management. Because HR professionals make HRM effectively apply in organization, and top management may impede on HRM effectively applying in organizations. So, limit functions are as following:

$$X1 + X2 \geq 1$$
$$X1 + X2 \geq 2$$

and simplex table is established below (Figure 2):

goal	X1	X2	S1	S2	
X1	1	1	1	0	1
X2	1	1	0	1	2
					?

Figure 2. Simplex table.

Accordingly, firms achieve optimal end when all variables in below line become positive, and question box (?) represents optimal solution.

Analysis or Discussion: Fourth Industrial Revolution

Modern economy currently struggles for the fourth Industrial Revolution (IR). The first is made by England and Europe in 1800s; the second appeared on economy in 1900s with electric and automobiles; the third may be described with computer sciences.

The Fouth IR may be described with intellectual capital. Competition between firms is strong in markets. There are lots of products in markets, and products are similar to each other. Customers have product choice dilemma. That dilemma may be called as isomorphism. What policy a firm may pursue under isomorphism threat? Answer might become human resources or intellectual capital. American HRM calls personnel or workforce as "human capital". Thus, intellectual capital may increase competitive advantage of company. Because intellectual capital may differentiate firm from rivals.

Conclusion

To conclude, firms apply HRM in their organizations via HRM practices (Bingol, 2014). Because HRM may have impact on firm performance through individual performance and talent management. Further, to

become competitive in the era, the fourth industrial revolution, firms need different strategy and intellectual capital.

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