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**The Factor Structure of Hospitality Satisfaction among Travelers with Mobility  
Impairments:  
An Integration of Content Analysis and the Three-Factor Theory of Customer Satisfaction**

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**ABSTRACT**

*There is a lack of attention to the demand from hospitality businesses for efficiently allocating limited resources on implementing services that enhance travelers' satisfaction the most. Through quantitative content analysis of on-line travel reviews during 2004-2012, the current study explored the hospitality services most concerned by tourist with mobility impairments (TWM). With multiple regression analysis it further categorized these services by their contribution to enhancing TWM's satisfaction based on a three-factor theory (Matzler & Sauerwein, 2002). The study initiates the identification of satisfaction factor structure based on textual data. It also provides pragmatic guides for better hospitality services to TWM.*

**Keywords:** *tourist satisfaction, people with disabilities, content analysis, three-factor theory.*

**INTRODUCTION**

Tourism researchers have agreed on the crucial role that tourism and hospitality environment plays in enabling/disabling travelers with physical impairments. Many studies thereby explored the challenges arising from the interactions between these people and tourism service environment (Poria et al., 2011), and in turn suggested guidelines to eliminate those challenges through proper services (Papamichail, 2012). Despite the benefits from implementing the recommended guidelines, a large proportion of hospitality businesses cannot apply them all, as the full implementation requires significant investments of both time and finances. Hence it is necessary for service providers to efficiently allocate limited resources and prioritize the implementation of certain services which potentially enhance these travelers' satisfaction the most. Such effort has been widely spread in different services, yet in tourism it has only been applied in destination satisfaction management (Kresic et al., 2012). Limited explorations exist in hospitality services, especially among the population of travelers with mobility impairments (TWM). Therefore, the current study explored the hospitality services most concerned by TWM and further categorized these services by their contribution to enhancing TWM's satisfaction.

**CONCEPTUAL FRAMEWORK**

A three-factor theory (Matzler & Sauerwein, 2002) was introduced in the current study to classify hospitality service attributes into three categories, by their distinct effect on TWM satisfaction. The three-factor structure is defined as: 1) *Basic factors*. Fulfillment of these factors does not increase travelers' satisfaction yet failing to fulfill them generates a high level of dissatisfaction. 2) *Performance factors*. The satisfaction level increases as these factors are

fulfilled and reduce when they are not. 3) *Excitement factors*. These factors increase overall satisfaction level when they are fulfilled but do not cause dissatisfaction when they are not.

## METHODS

Consider that travelers with disabilities in general have a high dependence on word-of-mouth, especially on online social media (Ray & Ryder, 2003), this study aimed to exploit the rich data from travel review websites through the application of quantitative content analysis. The study selected travel reviews about hospitality services for TWM from several popular forums where TWM usually share their travel reviews on. The trained data collectors retrieved data from several websites for the period of 2004 to 2012. The total number of valid textual file to be analyzed was 512 files, each from individual who was or took care of a TWM.

After data smoothing, the entire body of travel review texts was analyzed with CATPAC program to identify the most frequent key words used by TWM with reference to hospitality services. Based on the “dictionary” of one hundred identified frequent words, WORDER program was run for each individual’s travel review file respectively to count the frequency of “dictionary” words in each file and produced the word frequency matrix as the outcome. Principal components analysis with direct oblimin rotation was further employed based on the calculated word frequency matrix and identified thirteen service attributes TWM mostly concerned about (see Table 1). Penalty-reward analysis along with the rationale of three-factor structure theory was adopted to explore the hypothetical nonlinear relationship between the performances of thirteen service attributes and the overall satisfaction of TWM (Busacca & Padula, 2005). Multiple regression models with overall TWM satisfaction as dependent variable and their assessments of thirteen service attributes as independent variables were constructed in STATA 11.2. For each service attribute ( $j \leq 13$ ), two dummy variables were defined. One dummy variable  $X_{j+}$  indicated the positive attribute performance perceived by TWM. It took value of 1 when the individual expressed the attribute with positive words, and a value of 0 if not. The other dummy variable  $X_{j-}$  indicated the negative performance so took value of 1 when negative comments are mentioned about the attribute, otherwise took a value of 0. The neutral assessment thereby served as the reference category. The estimated parameters of each dummy variable suggest the “reward” ( $\beta_+$ ) or “penalty” ( $\beta_-$ ) effect of this service attribute. As a result, when  $|\beta_-| \geq \beta_+$ , the corresponding service attribute is a basic factor. When  $|\beta_-| \leq \beta_+$ , the attribute is an excitement factor. If  $|\beta_-| \approx \beta_+$ , it is a performance factor.

**Table 1**  
**Service Attributes of TWM’s Interest**

No.	Factor	Words	Variance Explained	Cronbach’s Alpha
1	Shower access	Shower, water, wall, showerhead, roll, tub, towels	8.81	.605
2	Hotel room access	Bed, door, fit, wide, size, double, floor	4.39	.437
2	Policy flexibility	Dog, assistance, wait, policy	3.99	.579
3	Toilet/Bathroom access	Bathroom, toilet, handrail, seat, height, wet	3.41	.606
4	Information credibility	Phone, website, matter, dangerous	2.97	.512
5	Wheelchair assistance	Wheelchair, reception, ramp, entrance, push	2.71	.457
6	Manager/Staff attitude and capability	Staff, helpful, friendly, welcome	2.28	.552

7	Parking convenience	Parking, car, space	1.99	.629
8	Security	Fire, exit	1.95	.547
9	Luggage assistance	Luggage, heavy	1.87	.527
10	In-building public area access	Ground, floor, lift, elevator	1.78	.493
11	Pool access	Pool, swim, chairs	1.59	.463
12	Ground slope/paving	Steep, hill, slope	1.49	.473
13	Hotel general quality	View, location, clean, comfortable	1.42	.496

**Notes:** Based on criteria established by Kaiser (1974) and Hair et al. (1995), the factors with the loading ( $\geq 0.4$ ) are retained to avoid loss of exploratory power. The weak consistency value of the identified factors, was caused by the flexible nature of the web-based data that the individuals did not express opinions corresponding to universal questions.

## RESULTS & DISCUSSION

Besides confirming the service barriers *perceived* by TWM as identified by existing hospitality studies (Kim & Lehto, 2012), including *hotel room access* (e.g., furnishing), *hotel public area access* (e.g, elevator/dining area access), and *manager/staff capability/attitude*, the current study identified several new service attributes. They are *policy flexibility* (individualized services), *information credibility*, and *security*. In addition, some service details were of special concern, such as *shower access*, *pool access*, *luggage assistance*, *parking convenience*, *ground slope/paving*, and *wheelchair assistance* (e.g., help push/fix/deliver wheelchair). The *general hotel quality* beyond the impairment-related attributes was also emphasized, including location, cleanness, comfort, quietness, and food quality.

Excluding the insignificant factors, the regression results (See Table 2) further classified *information credibility* and *parking convenience* into basic factors ( $|\beta_-| > \beta_+$ ), which must be closely monitored. Their quality should meet the expected level all the time but no need to waste resources to over perform on these services. Six performance factors ( $|\beta_-| \approx \beta_+$ ) such as *shower access*, *luggage assistance*, and *hotel general quality* caused constant returns in overall satisfaction. Their improvements should depend on the positioning and budget of the businesses despite its wish for an optimum performance. The remaining five excitement factors (e.g., *policy flexibility* and *security* with  $|\beta_-| < \beta_+$ ) are necessary for long-run competency.

**Table 2**  
**The Factor Structure of TWM Satisfaction Based on Regression with Dummy Variables**

Attributes	Dummy-variable regression coefficients		Factor determinant	Factor type
	Low performance assessment ( $\beta_-$ )	High performance assessment ( $\beta_+$ )		
Shower access	-.149** (-.2841; -.0136)	.107 <sup>ns</sup> (-.0567; .2704)	equal	Performance factor
Hotel room access	-.196*** (-.3202; -.0716)	.326**** (.1773; .4757)	negative	Excitement factor
Policy flexibility	-.217*** (-.3728; -.0622)	.308**** (.1445; .4711)	negative	Excitement factor
Toilet/Bathroom access	-.154** (-.2959; -.0131)	.228*** (.0608; .3960)	equal	Performance factor
Information credibility	-.305**** (-.4336; -.1758)	.188 <sup>ns</sup> (-.0681; .4445)	positive	Basic factor
Wheelchair	-.139* (-.2841; -.0136)	.177* (.0608; .3960)	equal	Performance factor

assistance Manager/Staff attitude and capability	(-.2963; .0186) -.201*** (-.3417; -.0597)	(-.0274; .3814) .448**** (.3281; .5671)	negative	factor Excitement factor
Parking convenience	-.238*** (-.4117; -.0650)	.058 <sup>ns</sup> (-.1407; .2577)	positive	Basic factor
Security	-.166* (-.3524; .0203)	.451** (.0613; .8413)	negative	Excitement factor
Luggage assistance	-.348** (-.6546; -.0407)	.308* (-.0454; .6617)	equal	Performance factor
In-building public area access	-.250**** (-.3804; -.1198)	.343**** (.1622; .5244)	negative	Excitement factor
Pool access	-.282** (-.5185; -.0456)	.216 <sup>ns</sup> (-.0458; .4768)	equal	Performance factor
Ground slope & paving	-.153* (-.3096; .0036)	.311*** (.0820; .5401)	negative	Excitement factor
Hotel general quality	-.199** (-.3618; -.0365)	.246**** (.1169; .3746)	equal	Performance factor

**Notes:**  $R^2=.72$ ; Number of observations = 512; \*\*\*\* $p \leq .001$ ; \*\*\* $p \leq .01$ ; \*\* $p \leq .05$ ; \* $p \leq .1$ ; ns = not significant; Confidence intervals are shown in brackets. Factor-classifying determinants were tested by Wald test ( $H_0 = \beta_- + \beta_+ = 0, p = .05$ .)

## CONCLUSION

This study initiates the identification of satisfaction factor structure based on textual data instead of survey data. It also provides pragmatic guides for small-size hospitality businesses to ensure the satisfaction of TWM without bearing the huge cost of making all the services accessible. However, the study is not without its limitations. The weak consistency of the identified factors was caused by the flexible nature of the web-based data that the individuals did not express opinions corresponding to universal questions. Also, the results may not be generalizable to all TWM as the data is only collected from on-line travel reviews. For a more accurate classification of 3-factor structure, the possible moderators such as impairments type, travel history, and accommodation type should also be included into the regression process.

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