

# Comparing and Prioritizing Measures of Personal Digital Resume: Job Seekers and Human Resource (HR) Practitioners' Perspectives

Chung-Chu Liu

Department of Business Administration, National Taipei University  
New Taipei 237, Taiwan, ROC  
gereliu@mail.ntpu.edu.tw

*Received 6 September 2013; Revised 31 December 2013; Accepted 27 January 2014*

**Abstract.** Personal resume is a widely used human resource selected method and decision reference. Individuals can improve their image through personal resume. Personal digital resume involves using information technology to develop qualified job seekers for employment. The aim of this study is to identify constructs and prioritize the measures of personal digital resume. FAHP(Fuzzy Analytic Hierarchy process) is a synthetic extension of classical AHP method when the fuzziness of the decision makers is considered. The fuzzy analytic hierarchy process is utilized to gather and analyze data. A total of 29 people were selected and were a combination of 16 job seekers and 13 HR practitioners. Based on the results, the personal digital resume may be categorized into three dimensions: Internet image capital, Internet social capital, and Internet innovative capital. Additionally, the study develops 9 indicators for personal digital resume assessment. Ideas for theoretical and practical implementation are discussed.

**Keywords:** resume, digital, recruiting, web portfolio, personal digital resume, website service.

## 1 Introduction

Resume is a key factor in looking for a job [1]. Despite the fact that the resume is the first means of contact between companies and job applicants, very little empirical evidence actually exists to aid resume development [2]. With significant advances in technology, electronic resume has gradually become a useful tool in the job application process. One of the most difficult challenges that companies face when they make use of internet recruiting is the large number of resumes that they may receive for companies [3],[4]. Because of the growth of technology, a number of websites offer new services for their users. Quible [5] defines electronic resumes as those that are placed on the internet for the purpose of job-seeking online. A number of websites, such as HR service websites, provide users with the opportunity to upload their resumes to be accessed online. On the Internet, candidates' personal resumes are more easily accessed. On the other hand, HR workers are more effective in recruiting [3]. As well as this, personal resumes on the Web provide extra documents such as job seekers' photos, professional documents, artwork, and multimedia content, including audio, video, and animation [6]. Because of this, personal resumes on the internet offer more than traditional resumes. Additionally, research shows that 65 percent of big companies received on-line resumes [3],[7].

Recruiters are increasingly dependent on information systems especially digital resume databases to interview job applicants in the business[8]. The importance of personal resumes on the Web is rising. A significant amount of research has indicated that biographical characteristics and personality help forecast success in the job search [9]. The large volume of resumes is hard to identify the appropriate applicants for companies. Dynamic, technical, interesting, funny resumes could be attracted by recruiters. The electronic resume becomes an important new job-search tool [5]. Personal digital resume means using information technology to develop qualified job seekers for employment. This resume is easy to transmit and expand on the internet. Job seekers also can change old information and add new object to the personal digital resume. These actions improve job seekers the possibility of getting better jobs. Despite recent selective reviews, not much is known about the nature of the personal digital resume. Moreover, the current literature does not provide consistent requirements for digital resume content.

The objectives of this study, therefore, are twofold. One is to understand the elements of the personal digital resume according to the perception of HR department workers and candidates (job seekers). The other is to prioritize these measures. Tang and Beynon[10] asserted modified synthetic extent FAHP allows for incompleteness of the

pairwise judgements made, and this feature reflects its suitability in decision problems where uncertainty exists in the judgement-making process. Aggarwal and Singh[11] proposed that conventional AHP still cannot reflect the human thinking style as precise data concerning human attributes are quite hard to be extracted. Fuzzy logic offers a systematic base to handle situations, which are ambiguous or not well defined.

In summary, this inquiry take a look at the practicability of constructing personal digital resume measures in the Internet recruiting realm.

## 2 Literature Review

### 2.1 Traditional Resume

The selection of job seekers is a very important task in companies. The most used employment selection process used by businesses is likely to be the process of reviewing candidates' resumes, and is used more than the interview process [12]. Ross and Young [13] discovered eight key resume categories: (1) career objectives, (2) educational record-college, (3) educational record-high school, (4) related work experience, (5) non-related work experience, (6) personal information, (7) professional and personal involvement, and (8) references. Fritzsche and Brannick [14] draw attention to the significance of representative design in resume screening judgment tasks. Udechukwu and Manyak [15] look at that which determines differences in the perceptions of job applicants when using resume versus employment application forms in the recruitment process. The only factor that produced different perceptions in favor of resumes for the job applicants was ease of use. There are two approaches suggested by Proenca and Oliveira [16], one is a normative-predictive model and the other is an action-intuitive model. The former considered the valid and reliable method for selection goal, the latter take care the outcome of the decision as an end in itself.

Many studies examined the relationship between personality and job interview success [9],[17],[18],[19],[20]. Resume characteristics such as resume length, objective (general vs. specific), relevant coursework, grade point, and accomplishment provided an advantage in obtaining an invitation to interview [2]. Udechukwu and Manyak [15] use six variables such as ease, accuracy, conveyance of information, flexibility, convenience and preference to compare job seekers' perceptions of resumes versus employment application forms.

### 2.1 Personal digital Resume

Due to information technology grows; traditional resumes can be changed through WWW or Internet. Recruiting tools become more complex and diversity. Job seekers can use information technical tools to improve their resumes. Companies also can adopt websites to help them screen job applicants' resume. These websites provide many functions and enhance recruiting effectiveness or competitive advantage of organizations. Liu and Chen [21] also suggested digital capital of three factors such as internet relational capital, internet customer capital and internet service capital for recruiting websites of national armed forces. Liu and Wang [22] develop digital capital of job search websites with four dimensions including internet relational capital, internet customer capital, internet service capital and internet innovative capital to improve their competitive advantages. Chen [23] identified four dimensions to measure digital capital of automated cargo clearance business websites that is Internet relational capital, Internet customer capital, Internet innovative capital, and Internet service capital. Liu [24] explored digital capital measures of hospital service websites from the users perspectives which has been categorised into three dimensions: Internet relation capital, Internet patient capital and Internet service capital.

Based on job seekers' perspectives, they should develop their digital resume to improve their competitiveness in selecting process. Quible [5] suggests that the electronic resume is made up of various characteristics: it is designed to be electronically scanned, it is designed to be neither read nor used by humans in the same way, and the scanning requires several inflexible format rules. A talented employee who fits the position is the most worthy resource for companies to gain competitive advantage [25]. The method which HR recruiters and managers use to evaluate whether the applicants fit the job has been looked at for some time [1] and the resumes are key in improving the quality of the recruitment process. After the widespread use of the internet, some websites started to offer platforms to users, such as the concept of Web portfolio. Furtmueller, et al. [8] provided the understanding of the different requirements of recruiters for offline and online resumes and identified areas for the maintenance and extension of online resume databases and then derived recommendations for digital resume design. Haitsma [26] developed the

main categories currently used in online resume forms: current career state, desired job, education, work experience, extracurricular activities, skills and personal contact information. What is Web portfolio? According to DiMarco [6], [27], the electronic portfolio incorporates the elements of the internet and allows users to interact, and be influenced by mass communication. A Web portfolio allows an opportunity to show real evidence of the growth and accomplishment of its users. However, past research [6],[28] concentrates on the storage of files, and seldom focuses on the process of applying for jobs. In fact, recruitment can be accomplished with the use of the Web portfolio, which gives recruiters a lot of useful information about the applicants and the recruitment process [6]. Past research [1],[29],[30] also indicates that social capital is connected to the success of a job application. The present study combines the resumes with the Internet and sums up with a conception of personal digital resume. Therefore, studying measures of personal digital resume on the websites becomes very important.

### 3 Methodology

To get the content of personal digital resume, this study gathered data from both job seekers and HR practitioners. Veerabathiran and Srinath [31] introduced Fuzzy AHP, with the use of triangular fuzzy numbers for pairwise comparison scale of Fuzzy AHP, and the use of the extent analysis method for one synthetic extent value of the pairwise comparison. Celik, et al. [32] adopted Fuzzy AHP methodology, based on Chang's extent analysis to construct the model the shipping registry selection. The model is performed with a case application after structuring the basic hierarchy. Kabir and Hasin [33] thought that AHP is a method to decide among the complex criteria structure in different levels and FAHP is a mixed extension of classical AHP method when the fuzziness of the decision makers is considered. Nouei et al. [34] conducted that FAHP has successfully detected strongest risk factors and showed the power of the engineering tools in health area. The fuzzy analytical hierarchy process was utilized to collect and analyze data.

#### 3.1 Sample

In order to compare different opinions with job seekers and human resource managers or related employees, persons who have job search experiences are selected. Purposive sample is utilized in this study. The research finds that research participants varied in age from 21 to 45. The intention of this stage is to develop a content of personal digital resume in recruiting. The result is given to combine with some literature to create the analytical framework. This research makes use of convenience sampling to collect data. 29 people were selected including job seekers and HR workers. About sixty percentages of the respondents were male and forty percentages of the respondents were female.

#### 3.2 Conceptual Framework

A number of articles are used to develop e-government, quality of service, television language, digital capital or intellectual capital measures for improving competitive advantages in organizations [21], [23], [35],[36], [37],[38],[39]. The definition of measures of personal digital resume is any digital form of personal biographical data and work related experiences connecting with job search websites or business websites for persons who care about these job seekers. The AHP methodology comprises four steps: first, develop the hierarchical structure; second, assign different levels of relative importance to each of the selection criteria for the different elements of digital resume; third, rank the alternatives under each criterion; fourth, rank the contribution of each alternative to digital resume. This study develops three main factors of digital resume with use of the conceptual framework listed above: 1. **Internet image capital**: Internet image capital is the means by which personal information is offered to employers via the Internet, the facets of Internet image capital of this study consist of personal education and work experience, certification, connect agents, and personal blog; 2. **Internet social capital**: Internet social capital makes reference to the resource of relationship, Internet social capital includes personal accomplishments, references, and personal file sharing. 3. **Internet innovative capital**: refers to the new functions which make job seekers, recruiting more effective. There are three factors, including whether personality fits with the position, keywords navigating, and media and voice interaction.

**Table 1.** Definitions and Level Description of Personal Digital Resume

Major Dimension	Sub-dimensions	Descriptions	References
Internet image capital (IIC)	Personal education and work experience	Job seekers who have good education and work experience.	[1],[21],[40],[41]
	Certification	Job seekers who have received many professional certifications.	
	Personal blog	Job seeker who has built a personal blog and made it available on the internet.	
Internet social capital (ISC)	Personal achievements	Job seekers who have been involved in many activities and won a number of prizes.	[1],[6],[17],[29],[41],[42]
	Recommendations	Job seekers who have been recommended by well-known people.	
	Personal file sharing	Job seekers who have shared many personal files on the internet	
Internet innovative capital (INC)	Personality fit with position	Job seekers whose personalities fit the jobs for which they are applying.	[3],[4],[6],[21],[23],[43],[44],[45],[46],[47]
	Keywords navigating	Job seekers who can be found easily with the use of keywords when navigating on the internet.	
	Media and voice interaction	Job seekers who can easily interact with media and voice on the internet.	

As mentioned before, in first three main dimensions, all coders are total agree, in nine items three main factors are found by using the formula  $[n(\text{average mutual degree})/1+(n-1)(\text{average mutual degree})]$  to measure the validity of this study [21],[23],[48]. The average mutual degree of this study by five coders is 0.688. The reliability of this study is 0.917  $[5 \times 0.688/1 + (5 - 1) \times (0.688)]$ , therefore the reliability of these items in this study is acceptable.

On the other hand, there are two kinds of validity were discussed in this research. The first one is face validity, the subjective assessment of the correspondence between the nine items and the concept through rating by coders' judges. The second is content validity. This can be ensured if the items representing the constructs of an instrument are substantiated by a comprehensive review of the related literature [24],[49]. Five human resource practitioners were invited to share their experiences regarding requirements in personal digital resume, thus the face and content validities are acceptable.

**Table 2.** Coding Results of Mutual Agreements of Nine Items in Three Dimensions

	1	2	3	4	5
1	--				
2	8/9	--			
3	6/9	5/9	--		
4	5/9	6/9	8/9	--	
5	6/9	7/9	5/9	6/9	--

### 3.3 Chang's Extended Analysis of The fuzzy Analytic Hierarchy Process

According to these suggestions as mentioned above, this research made use of the AHP method to analyze data for combining the concept of Saaty [50]. According to the result, the analytical framework is constructed. The researchers made use of some concepts of literatures and checked the responses of 16 persons from AHP questionnaires.

Zaddeh [51] introduced the "fuzzy set theory" to help solve problems involving the absence of clearly defined criteria. Results may not be valid if uncertainty, or "fuzziness" is not considered in the decision-making process. Nowadays, the fuzzy theory has been used in various fields in the last forty years. The theory of fuzzy sets has also

changed and modified in a number of directions, such as the fuzzy analytical hierarchical process (FAHP). There are a number of FAHP approaches which take a systemic approach to an alternative selection and justification on various criteria decision-making process. In this case, the fuzzy set theory and hierarchical structure analysis are used [52],[53],[54],[55],[56],[57]. These approaches have various advantages and disadvantages in terms of solving FAHP-based models. The most recent approach of the solving processes of FAHP-based models is based on Chang's [54] extent fuzzy AHP modeling. Chang [54] used triangular fuzzy numbers for the pair-wise comparison scale of FAHP, and utilized the extent analysis method for the synthetic extent values of the pair-wise comparisons. There are many, and FAHP application researches based on Chang's extent analysis can be found more and more. For instance, prioritizing the requirements of customers in the QFD [58]; assessing the CIM alternatives [59]; measuring the customer satisfaction in catering companies in Turkey [60]; developing a methodology to enhance the quality of decision-making in software development projects [61]; and relating the competitiveness and management of technology [62]. More recently, alternatives of knowledge and portal development tools have been identified [63]. Chan and Kumar [64] developed a model for the global supplier development problem, suggesting the need for a risk-based global supplier development model; prioritization of organizational and human capital measurement indicators [65],[66]; and putting in order the system for semiconductor fabrication [67]. The trends in terms of using the FAHP in publications have increased in many disciplines on a number of topics. However there is an apparent lack of application on national armed forced recruiting issues. Therefore, in this study, we take on Chang's [54],[68] extent analysis method because the processes of this approach are simpler to use than the alternative fuzzy AHP approaches [21],[23], [32],[61].

**Table 3.** FAHP Scale

Definition	Intensity of importance
Equal	(1, 1, 3)
Weak	(1, 3, 5)
Fairly Strong	(3, 5, 7)
Very Strong	(5, 7, 9)
Absolute	(7, 9, 9)
medium	(1, 2, 3) (3, 4, 5) (5, 6, 7)

Here we briefly describe the expressions of Chang's extent analysis method on FAHP. Let  $X = \{x_1, x_2, \dots, x_n\}$  is an object set, and  $U = \{u_1, u_2, \dots, u_m\}$  is a goal set. Based on Chang's extent analysis [58][44], each object is taken and extent analysis for each goal,  $g_i$ , is performed, respectively. Therefore,  $m$  extent analysis values for each object can be attained. They can be expressed as  $M_{g_i}^1, M_{g_i}^2, \dots, M_{g_i}^n, i=1,2,\dots,n$ ,

where all  $M_{g_i}^j (j=1,2,\dots,m)$  are triangular fuzzy numbers. The steps of Chang's extent analysis can be presented as in the following:

Step 1: The value of fuzzy synthetic extent with respect to the  $i$ th object is defined as

$$S_i = \sum_{j=1}^m M_{g_i}^j \otimes \left[ \sum_{i=1}^n \sum_{j=1}^m M_{g_i}^j \right]^{-1},$$

where the  $\sum_{j=1}^m M_{g_i}^j$  can be obtained by conducting the addition operation of  $m$  extent analysis values for a particular matrix such that

$$\sum_{j=1}^m M_{g_i}^j = \left( \sum_{j=1}^m l_j, \sum_{j=1}^m m_j, \sum_{j=1}^m u_j \right), i=1,2,\dots,n.$$

Then we can obtain  $\left[ \sum_{i=1}^n \sum_{j=1}^m M_{g_i}^j \right]^{-1}$  by performing the fuzzy addition operation of  $M_{g_i}^j (j=1,2,\dots,m)$  values

such that  $\sum_{i=1}^n \sum_{j=1}^m M_{g_i}^j = \left( \sum_{i=1}^n l_i, \sum_{i=1}^n m_i, \sum_{i=1}^n u_i \right)$ , and then compute the inverse of this vector.

Step 2: The degree of possibility of  $M_2 = (l_2, m_2, u_2) \geq M_1 = (l_1, m_1, u_1)$  is defined as

$V(M_2 \geq M_1) = \sup_{y \geq x} [\min(u_{M_1}(x), u_{M_2}(y))]$ , when a pair  $(x, y)$  exists such that  $x \geq y$  and  $\mu_{M_1}(x) = \mu_{M_2}(y) = 1$ ,

then we have  $V(M_1 \geq M_2) = 1$ . Since  $M_1$  and  $M_2$  are convex fuzzy numbers we have and it can be expressed as

$$V(M_2 \geq M_1) = hgt(M_1 \cap M_2) = u_{M_2}(d) = \begin{cases} 1, & \text{if } m_2 \geq m_1 \\ 0, & \text{if } l_1 \geq u_2 \\ \frac{l_1 - u_2}{(m_2 - u_2) - (m_1 - l_1)}, & \text{otherwise} \end{cases}$$

Where,  $d$  is the ordinate of the highest intersection point between  $u_{M_1}$  and  $u_{M_2}$ .

To compare  $M_1$  and  $M_2$ , we need both the values of  $V(M_2 \geq M_1)$  and  $V(M_1 \geq M_2)$ .

Step 3: The degree of possibility for a convex fuzzy number to be greater than  $k$  convex fuzzy numbers  $M_i (i = 1, 2, \dots, k)$  can be defined by  $V(M \geq M_1, M_2, \dots, M_k) = V[(M \geq M_1) \text{ and } (M \geq M_2)$

$$\text{and } \dots \text{and } (M \geq M_k)] = \min V(M \geq M_i), i = 1, 2, \dots, k.$$

Assume that  $d'(A_i) = \min V(S_i \geq S_k)$ , for  $k = 1, 2, \dots, n; k \neq i$ . Then the weight vector is given by  $W' = (d'(A_1), d'(A_2), \dots, d'(A_n))^T$ , where  $A_i (i = 1, 2, \dots, n)$  are  $n$  elements.

Step 4: Normalizing the weight vector to get  $W = (d(A_1), d(A_2), \dots, d(A_n))^T$ , where  $W$  is a non-fuzzy number that gives priority weights of an attribute or an alternative over other.

### 3.4 Application of Fuzzy Analytic Hierarchy Process on Prioritization of Personal Digital Resume Measures

This study aims to prioritize personal digital resume measures. After the content analysis and fuzzy analytic hierarchy process analysis, this study compared perspectives of job seekers and human resource practitioners and found the three major distinct dimensions and the corresponding sub-dimensions that are described as follows.

**Table 4.** The Fuzzy Evaluation of Criteria with Respect to the Goal-Personal Digital Resume

Job seekers				
	IIC	ISC	INC	priority weights, $W_G$
IIC	(1,1,1)	(0.83,1.17,2.48)	(0.76,1.21,2.05)	0.39
ISC	(0.40,0.84,1.19)	(1,1,1)	(0.76,1.33,2.45)	0.33
INC	(0.48,0.82,1.30)	(1.30,0.40,0.74)	(1,1,1)	0.28
HR Practitioners				
	IIC	ISC	INC	priority weights, $W_G$
IIC	(1,1,1)	(1.01,1.56,2.86)	(1.25,1.99,3.33)	0.46
ISC	(0.34,0.64,0.98)	(1,1,1)	(0.90,1.66,2.67)	0.32
INC	(0.30,0.50,0.79)	(0.37,0.59,1.11)	(1,1,1)	0.22

The first major dimension, Internet Image Capital (IIC), is one of the most important dimensions of the personal digital resume. The main attribute, IIC, can be further divided into three sub-dimensions: Personal Education and Work Experience (EWE), Personal Blog (PBG), and Certification (CTF). The second main construct is Internet Social Capital (ISC) which is made up of three sub-dimensions: Recommendations (RCD), Personal Achievements (PAV), and Personal File Sharing (PFS). The third major dimension is Internet Innovative Capital (INC). The ISC is separated into three sub-dimensions: Personality Fit with Position (PFP), Media and Voice (MAV), and Keywords Navigating (KWN).

**Table 5.** The Fuzzy Evaluation of Sub-Dimensions with Respect to the Criteria IIC

Job seekers				
	EWE	PBG	CTF	priority weights, $W_{IIC}$
EWE	(1,1,1)	(2.07,3.48,5.14)	(0.90,1.40,2.83)	0.50
PBG	(0.20,0.28,0.44)	(1,1,1)	(0.22,0.31,0.52)	0.15
CTF	(0.37,0.70,1.03)	(2.04,3.19,4.10)	(1,1,1)	0.35
HR Practitioners				
	EWE	PBG	CTF	priority weights, $W_{IIC}$
EWE	(1,1,1)	(0.82,1.50,2.67)	(0.69,1.08,2.04)	0.37
PBG	(0.37,0.66,1.20)	(1,1,1)	(0.46,0.66,1.16)	0.30
CTF	(0.55,0.92,1.40)	(0.86,1.50,2.16)	(1,1,1)	0.33

**Table 6.** The Fuzzy Evaluation of Sub-Dimensions with Respect to the Criteria ISC

Job seekers				
	RCD	PAV	PFS	priority weights, $W_{ISC}$
RCD	(1,1,1)	(0.73,1.04,1.91)	(0.99,1.57,2.49)	0.37
PAV	(0.52,0.95,1.35)	(1,1,1)	(1.34,2.11,3.25)	0.39
PFS	(0.40,0.63,1)	(0.30,0.47,0.74)	(1,1,1)	0.24
HR Practitioners				
	RCD	PAV	PFS	priority weights, $W_{ISC}$
RCD	(1,1,1)	(0.75,1.10,1.95)	(1.28,2.09,3.26)	0.44
PAV	(0.51,0.90,1.32)	(1,1,1)	(1.23,2.18,3.67)	0.36
PFS	(0.30,0.47,0.78)	(0.27,0.45,0.81)	(1,1,1)	0.20

**Table 7.** The Fuzzy Evaluation of Sub-Dimensions with Respect to the Criteria INC

Job seekers				
	PFP	MAV	KWN	priority weights, $W_{INC}$
PFP	(1,1,1)	(0.70,1.11,2.01)	(0.69,1.32,2.38)	0.39
MAV	(0.49,0.90,1.42)	(1,1,1)	(0.60,0.83,1.76)	0.29
KWN	(0.46,0.75,1.30)	(0.56,1.19,1.64)	(1,1,1)	0.32
HR Practitioners				
	PFP	MAV	KWN	priority weights, $W_{INC}$
PFP	(1,1,1)	(1.02,1.50,3.00)	(0.83,1.29,2.34)	0.40
MAV	(0.33,0.66,0.97)	(1,1,1)	(0.45,0.68,1.49)	0.28
KWN	(0.42,0.77,1.20)	(0.66,1.45,2.19)	(1,1,1)	0.32

Five HR professionals were asked to make pair-wise comparisons for main dimensions and the corresponding sub-dimensions mentioned before. A questionnaire was given to gather the evaluations from both job seekers and HR practitioners. The group of experts came up with a consensus with the help of the Delphi Method; and showed that a single evaluation could be obtained to represent the group's opinion. The evaluation scale, used by experts, is presented in Table 3.

## 4 Results

Based on Table 1, the Internet image capital is the key factor in these dimensions. On the second level, applicants' education and work experience play an important role in the recruiting or selection process. Candidates with personal digital resume should concern themselves with the details of their education and work experience. On the other hand, Internet social capital is the second most important dimension. Personal accomplishments and recommendations are crucial preparatory matters included in the personal digital resume. Job seekers may understand and increase the value of the personal digital resume through the usage of a personal blog. The process of personal leaving both demonstrates and enhances the image of on applicant, and the impression candidates may

present. A good quality personal digital resume can strengthen personal competitiveness in the workplace and present the characteristics and personalities of job seekers.

On the first level, the same ranking in job seekers and HR practitioners is in sequence as follows: digital image capital, digital social capital, and digital innovative capital. According to the results, personal digital resume places a great deal of emphasis on digital image capital; job seekers may accumulate this capital with a good education, work experience, blog management, and professional certification.

**Table 8.** The Result of this Study

Personal Digital resume		Job seekers (n=16)			HR Practitioners (n=13)			Total (n=29)		
Major dimension	Sub-dimension	Weighting(Ranking)			Weighting(Ranking)			Weighting(Ranking)		
		First	Second	Total	First	Second	Total	First	Second	Total
Internet image capital	Personal education and work experience	0.39(1)	0.50(1)	0.20(1)	0.46(1)	0.37(1)	0.17(1)	0.42(1)	0.44(1)	0.19(1)
	Personal blog		0.15(3)	0.05(9)		0.30(3)	0.14(4)		0.22(3)	0.09(6)
	Certification		0.35(2)	0.14(2)		0.33(2)	0.15(2)		0.34(2)	0.14(2)
	Recommendations		0.37(2)	0.12(4)		0.44(1)	0.14(3)		0.40(1)	0.13(3)
Internet social capital	Personal achievements	0.33(2)	0.39(1)	0.13(3)	0.32(2)	0.36(2)	0.12(5)	0.33(2)	0.38(2)	*0.13(4)
	Personal file sharing		0.24(3)	0.08(8)		0.20(3)	0.06(8)		0.22(3)	0.07(8)
Internet innovative capital	Personality fit with position	0.28(3)	0.39(1)	0.11(5)	0.22(3)	0.41(1)	0.09(6)	0.25(3)	0.40(1)	0.10(5)
	Media and voice		0.29(3)	0.08(7)		0.27(3)	0.06(9)		0.28(3)	0.07(9)
	Keywords navigating		0.32(2)	0.09(6)		0.32(2)	0.07(7)		0.32(2)	0.08(7)

\*0.1254 was rounded off to the 2nd decimal place (0.13).

On the second level, sub-items in digital image capital, the most important element is good education and work experience, the second is certification of a professional natures, and the third is personal blog use of job seekers and HR practitioners. Additionally, the sequence of sub-dimensions in digital social capital is personal accomplishment, personal file sharing and good references. Human resource practitioners rank as recommendation, personal accomplishments, and personal file sharing. This means that human resource practitioners consider the recommendation or reference a more objective indicator for job searching. Finally, the ranking of sub-dimensions in digital innovative capital is personality fit with position, media and voice, and keywords navigating with the same sequence in job seekers and human resource practitioners.

With regard to the dimensions, first, the Internet image capital element has grown in importance because good personal image make interviewers' good first impression. Job seekers established past performance on their blogs to let interviewers know more about them. Second, as for Internet social capital, job seekers should show their good relationships through their interactions with friends. Effective social skills could benefit job seekers in their future workplaces. Third, regarding Internet innovative capital, job seekers should put emphases on related innovative direction including e-learning, knowledge processing, and connectedness to improve their digital resume.

## 5 Conclusion and Suggestions

Organizations use resumes as the initial screening tool because they provide opportunities to determinants if job seekers with requisite knowledge, skills, abilities prior to expensive selection measures [12]. Personal digital resume provide a new direction to demonstrate and express job seekers' personality, learning process, characteristics etc. To measure the personal digital resume makes job seekers more easily to understand how to improve the content. The aim of this study is to develop measurements and prioritize the personal digital resume on websites. Literature

review and the analytic hierarchy process were adopted to collect and analyze data. A total of 29 graduates and HR practitioners were chosen. Based on the results, the personal digital resume may be divided into three dimensions: Internet image capital, Internet social capital, and Internet innovative capital. On the first level, the Internet image capital is the first factor in the sequence of three dimensions. Job seekers need to express their education experiences and certifications to improve their images. Internet social capital is the second dimension in the sequence of three factors. Job seekers can accumulate their human relations and attend social activities to enhance their social capital. On the second level, applicants' education, work experience, personal accomplishments, and recommendations are elements of an excellent personal digital resume. The research also develops 9 indicators for personal digital resume for personal performance appraisal. Measuring personal digital resume can aid companies in selecting and recruiting their employees of choice and may provide evaluative indicators for both HR workers and managers.

It is often difficult to identify interviewees' characters and work value during the interviewing process. Interviewers can, however, begin to understand the value of potential employees by looking at personal digital resumes. Job applicants can improve their personal competitiveness and soft power by modifying the content of their personal digital resumes and succeed at obtaining their job of choice. The topics of digital resume in e-commerce or e-recruitment have received more and more attention in the literature to date. Measuring digital resume also can be used to help job seekers formulate dynamic individual career map and get more opportunities. These indicators also provide an evaluation basis for human resource managers or information managers from many countries and innovative direction for job banks. All job seekers derive positive benefits from digital resume measures and transmit digital resumes through job search websites. On the other hand, some famous job banks also can develop some digital resume measures that are useful for job seekers based on the different ranking items. These companies are preparing to target job seekers all over the world. Globalisation provides great opportunities for job banks to expand their business internationally [69]. Hence, the business model and personal digital resume of job banks is worth studying in the future, such as design of authentication-as-a-services architecture in cloud computing [70] and personal data protection [71].

There are several limitations to this research that should be mentioned. The first limitation involves recruiters' judgment without consideration. A second concern limitation entails the sample of job seekers seems to be smaller. A third concern is related to validity. This question needs more studies and researches to test.

## References

- [1] N.T. Nguyen, C.L. Allen, R.L. Godkin, "Recruiter's Assessment and Use of Social Capital in Resume Screening," *Journal of Applied Social Psychology*, Vol. 36, pp. 1813-1832, 2006.
- [2] P. Thoms, R. McMasters, M. R. Roberts, D. A. Dombkowski, "Resume Characteristics as Predictors of an Invitation to Interview," *Journal of Business and Psychology*, Vol. 13, No. 3, pp. 339-356, 1999.
- [3] A.A. Mohamed, J.N. Orife, K. Wibowo, "The Legality of Key word Search as a Personnel Selection Tool," *Employee Relations*, Vol. 24, pp. 516-522, 2002.
- [4] M. McCourt-Mooney, *Recruitment and Selection R and D Using the Internet: Part III*, *Journal of Managerial Psychology*, Vol. 15, pp. 1-5, 2000.
- [5] Z. K. Quible, "The electronic resume: An Important New Job-search Tool," *Journal of Education for Business*, Vol. 74, No. 2, pp. 79-82, 1998.
- [6] J. DiMarco, "A Statewide Analysis of Student Web Portfolios in New York Colleges and Universities," *International Journal of Information and Communication Technology Education*, Vol. 3, pp. 15-25, 2007.
- [7] S.L. Thomas, K. Ray, "Recruiting and the Web: High-tech Hiring," *Business Horizons*, Vol.43, No.3, pp.43-52, 2000.
- [8] E. Furtmueller, C. Wilderom, M. Tate, "Managing Recruitment and Selection in the Digital Age: E-HRM and resumes," *Human Systems Management*, Vol. 30, No. 4, pp.243-259, 2011.

- [9] C. Tay, S. Ang, S. Dyne, "Personality, Biographical Characteristics, and Job Interview Success: A Longitudinal Study of the Mediating Effects of Interviewing Self-efficacy and the Moderating Effects of Internal Locus of Causality," *Journal of Applied Psychology*, Vol. 91, No. 2, pp. 446-454, 2006.
- [10] Y. C. Tang, M. J. Beynon, "Application and Development of a Fuzzy Analytic Hierarchy Process within a Capital Investment Study," *Journal of Economics and Management*, Vol. 1, No. 2, pp.207-230, 2005.
- [11] R. Aggarwal, S. Singh, "AHP and Extent Fuzzy AHP Approach for Prioritization of Performance Measurement Attributes. Paper presented at World Academy of Science," *Engineering and Technology*, Vol. 73, pp. 160-165, 2013.
- [12] M. S. Cole, H. S. Field, W. F. Giles, S. G. Harris, "Recruiters' Influences of Applicant Personality Based on Resume Screening: Do Paper People Have a Personality?" *Journal of Business and Psychology*, Vol.24, pp. 5-18, 2009.
- [13] C. M. Ross, S. J. Young, "Resume Preference is It Really Business as Usual?" *Journal of Career Development*, Vol. 32, No. 2, pp. 153-164, 2005.
- [14] B. A. Fritzsche, M. T. Brannick, "The Importance of Representative Design in Judgment Tasks: The Case of Resume Screening," *Journal of Occupational and Organizational Psychology*, Vol. 75, pp. 163-169, 2002.
- [15] I. Udechukwu, T. Manyak, "Job Applicants' Perceptions of Resumes Versus Employment Application Forms in the Recruitment Process in a Public Organization," *Public Personnel Management*, Vol. 38, No. 4, pp. 79-96, 2009.
- [16] M. T. V. C. Proenca, E.T.V. D. D. Oliveira, "From Normative to Tacit Knowledge: CVs Analysis in Personal Selection," *Employee Relations*, Vol. 31, No. 4, pp. 427-447, 2009.
- [17] D. F. Caldwell, J. M. Burger, "Personality Characteristics of Job Applicants and Success in Screening Interviews," *Personnel Psychology*, Vol. 51, pp. 119-136, 1998.
- [18] K.W. Cook, C. A. Vance, "The Relation of Candidate Personality with Selection-Interview Outcomes," *Journal of Applied Social Psychology*, Vol. 30, No. 4, pp. 867-885, 2000.
- [19] K.V. Dam, "Trait Perception in the Employment Interview: A Five-factor Model Perspective," *International Journal of Selection and Assessment*, Vol. 11, No. 1, pp. 43-55, 2003.
- [20] R. Kanfer, C. R. Wanberg, T.M. Kantrowitz, "Job Search and Employment: A Personality-motivational Analysis and Meta-analytic Review," *Journal of Applied Psychology*, Vol. 86, No. 5, pp. 837-855, 2001.
- [21] C. C. Liu, S. Y. Chen, "Prioritization of Digital Capital Measures in Recruiting Website for the National Armed Forces," *Expert Systems with Applications*, Vol. 36, pp. 9415-9421, 2009.
- [22] C. C. Liu, H. J. Wang, "Developing Measures of Digital Capital and Virtual Value Chain Construction in Job Search Websites," *International Journal of Management and Enterprise Development*, Vol. 4, No. 1, pp. 66-81, 2007.
- [23] S.Y. Chen, "Exploring Digital Capital of Automated Cargo Clearance Business Websites," *Expert Systems With Applications*, Vol. 38, No. 4, pp. 3590-3599, 2011.
- [24] C.C. Liu, "Exploring Digital Capital Measures of Hospital Service Websites from the User's Perspective," *International Journal of Technology, Policy and Management*, Vol. 10, No. 4, pp. 333-342, 2010.
- [25] J. Collins, *Good to Great*, HarperCollins Publishers, London, 2001.
- [26] M. Haitsma, "Online Resume Design: the Recruiters' Perspective," *11<sup>th</sup> Twente Student Conference on IT, Enschede, University of Twente, Faculty of Electrical Engineering, Mathematics and Computer Science*, June 29th, 2009.
- [27] J. DiMarco, *Web Portfolio Design and Applications*, Idea Group, Hershey, 2005.

- [28] G. Greenberg, "The Digital Convergence: Extending the Portfolio Mode," *Educause Review*, Vol. 39, No. 4, pp. 28-37, 2004.
- [29] M.S. Granovetter, "The Strength of Weak Ties," *American Journal of Sociology*, Vol. 78, No. 6, pp. 1360-1380, 1973.
- [30] M.S. Granovetter, *Getting a Job: A Study of Contacts and Careers (2nd ed.)*, University of Chicago Press, Chicago, 1995.
- [31] R. Veerabathiram, K. A. Srinath, "Application of the Extent Analysis Method on Fuzzy AHP," *International Journal of Engineering Science and Technology*, Vol. 4, No. 7, pp. 3472-3480, 2012.
- [32] M. Celik, I. D. Er, A. F. Ozok, "Application of Fuzzy Extended AHP Methodology on Shipping Registry Selection: The Case of Turkish Maritime Industry," *Expert System with Application*, Vol. 36, pp. 190-198, 2009.
- [33] G. Kabir, M. A. A. Hasin, "Comparative Analysis of AHP and Fuzzy AHP Models for Multicriterial Inventory," *International Journal of Fuzzy Logic Systems*, Vol. 1, No. 1, pp. 1-16, 2011.
- [34] M. T. Nouei, A. V. Kamyad, S. Ghazalbash, M. R. Sarzaeem, "Application of Fuzzy –AHP Extent Analysis to Determine the Relative Importance of Risk Factors in Operative Mortality after Coronary Artery Bypass Surgery," *International Journal on Computer Science and Engineering*, Vol. 5, No. 5, pp.393-401, 2013.
- [35] K.A. April, P. Bosma, D. A. Deglon, "IC Measurement and Reporting: Establishing a Practice in SA Mining," *Journal of Intellectual Capital*, Vol. 4, No. 2, pp. 165-180, 2003.
- [36] K. Bang, M.A. Raymond, C. R. Taylor, Y. S. Moon, "A Comparison of Service Quality Dimensions Conveyed in Advertisements for Service Providers in the USA and Korea: A Content Analysis," *International Marketing Review*, Vol. 22, No. 3, pp. 309-326, 2005.
- [37] J. Foster, A. Lin, "Developing Expertise in E-commerce: A Content Analysis of students' Knowledge of Online Auctions," *Journal of Information Systems Education*, Vol. 16, No. 1, pp. 85-91, 2005.
- [38] C.C. Liu, "Using E-governmental Indicators to Build Virtual Value Chain," *Electronic Government*, Vol. 2, No. 3, pp. 277-291, 2005.
- [39] C.C. Wang, Y.H. Yang, "A Content Analysis of Taiwanese Television Commercials Containing the Japanese Language," *Journal of American Academy of Business*, Vol. 8, No. 1, pp. 176-183, 2006.
- [40] B.K. Brown, M.A. Champion, "Biodata Phenomenology: Recruiters' Perceptions and Use of Biographical Information in Resume Screening," *Journal of Applied Psychology*, Vol. 79, No. 6, pp. 897-908, 1994.
- [41] C. Sue-Chan, M.T. Dasborough, *The Influence of Chinese Guanxi and Australian Mastership on Employee Selection Decision Making*, Paper presented at the annual conference of Academy of Management, Seattle, WA, 2003.
- [42] A.I. Huffcutt, J.M. Conway, P.L. Roth, N.J. Stone, "Identification and Meta-analytic Assessment of Psychological Constructs Measured in Employment Interviews," *Journal of Applied Psychology*, Vol. 86, pp. 897-913, 2001.
- [43] M.S. Cole, H.S. Field, W.F. Giles, S.G. Harris, "Job Type and Recruiters' Inferences of Applicant Personality Drawn from Resume Biodata: Their Relationships with Hiring Recommendations," *International Journal of Selection and Assessment*, Vol. 12, pp. 363-367, 2004.
- [44] M.S. Cole, H.S. Field, J.O. Stafford, "Validity of Resume Reviewers' Inferences Concerning Applicant Personality Based on Resume Evaluation," *International Journal of Selection and Assessment*, Vol. 13, pp. 321-324, 2005.
- [45] V. Frazee, "Go Paperless One Sheet at a Time," *Personnel Journal*, Vol. 75, pp. 68-73, 1996.
- [46] H.G. Heneman, T.A. Judge, *Staffing Organizations (6th ed.)*, Irwin-McGraw-Hill, Madison, WI., 2008.

- [47] J. Laabs, "Personality Fit: A New Approach to Recruiting," *Workforce*, Vol. 78, No. 8, pp.88-91, 1999.
- [48] R.A. Smith, M.J. Houston, "A Psychometric Assessment of Script in Consumer Memory," *Journal of Consumer Research*, Vol. 12, pp. 214-224, 1985.
- [49] G. Issac, C. Rajendran, R.N. Anantharaman, "A Holistic Framework for TQM in Software Industry: A Confirmatory Factor Analysis Approach," *Quality Management Journal*, Vol. 11, No. 3, pp.35–60, 2004.
- [50] T.L. Saaty, "How to Make a Decision: The Analytic Hierarchy Process," *Interfaces*, Vol. 24, pp. 19-43, 1994.
- [51] L. A. Zadeh, "Fuzzy sets," *Information and Control*, Vol. 8, pp. 338-353, 1965.
- [52] C. G. E. Boender, J. G. de Grann, F. A. Lootsma, "Multicriteria Decision Analysis with Fuzzy Pairwise Comparison," *Fuzzy Sets and Systems*, Vol. 29, No. 2, pp. 133-143, 1989.
- [53] J. J. Buckley, "Fuzzy Hierarchical Analysis," *Fuzzy Sets and Systems*, Vol. 17, No. 3, pp. 233-247, 1985.
- [54] D. Y. Chang, "Applications of the Extent Analysis Method on FAHP," *European Journal of Operational Research*, Vol. 95, No. 3, pp. 649-655, 1996.
- [55] K. J. Zhu, D. Y. Chang, "A Discussion for Extent Analysis Method and Applications of Fuzzy AHP," *European Journal of Operational Research*, Vol. 116, pp. 450-456, 1999.
- [56] C.H. Cheng, "Evaluating Naval Tactical Missile Systems by FAHP Based on the Grade Value of Membership Function," *European Journal of the Operational Research*, Vol. 96, No. 2, pp. 423-443, 1996.
- [57] P. J. M. Van Laarhoven, W. Pedrycz, "A Fuzzy Extension of Saaty's Priority Theory," *Fuzzy Sets and Systems*, Vol. 11, No. 1-3, pp. 229–241, 1983.
- [58] C. K. Kwong, H. Bai, "Determining the Importance Weights for the Customer Requirements in QFD Using a Fuzzy AHP with an Extent Analysis Approach," *Journal of Intelligent Manufacturing*, Vol. 35, pp. 619-626, 2003.
- [59] C. H. Bozdog, C. Kahraman, U. Cebeci, D. Ruan, "Fuzzy Group Decision Making for Selection Among Computer Integrated Manufacturing Systems," *Computers in Industry*, Vol. 51, No. 1, pp. 13-29, 2003.
- [60] C. Kahraman, U. Cebeci, D. Ruan, "Multi-attribute Comparison of Catering Service Companies Using FAHP: The Case of Turkey," *International Journal of Production Economics*, Vol. 87, No. 2, pp.171-184, 2004.
- [61] G. Buyukozkan, C. Kahraman, D. Ruan, "A Fuzzy Multi-criteria Decision Approach for Software Development Strategy Selection," *International Journal of General Systems*, Vol. 33, No. 2-3, pp. 259-280, 2004.
- [62] Y. C. Erensal, T. Oncan, M. L. Demircan, "Determining Key Capabilities in Technology Management Using Fuzzy Analytic Hierarchy Process: A Case Study of Turkey," *Information Sciences*, Vol. 176, No. 18, pp. 2755-2770, 2005.
- [63] C. Wu, V. B. Kreng, "Evaluation of Knowledge Portal Development Tools Using a FAHP Approach: The Case of Taiwanese Stone Industry," *European Journal of Operational Research*, Vol. 176, No. 3, pp. 1795-1810, 2007.
- [64] F.T.S. Chan, N. Kumar, "Global Supplier Development Considering Risk Factors Using Fuzzy Extended AHP-Based Approach," *Omega*, Vol. 35, pp. 417-431, 2007.
- [65] F. T. Bozbura, A. Beskese, "Prioritization of Organizational Capital Measurement Subdimensions Using FAHP," *International Journal of Approximate Reasoning*, Vol. 44, No. 2, pp. 124-147, 2007.
- [66] F. T. Bozbura, A. Beskese, C. Kahraman, "Prioritization of Human Capital Measurement Indicators Using FAHP," *Expert Systems with Applications*, Vol. 32, No. 4, pp. 1100-1112, 2007.

- [67] H.Y. Kang, A. H. I. Lee, "Priority Mix Planning for Semiconductor Fabrication by Fuzzy AHP Ranking," *Expert Systems with Applications*, Vol. 32, No. 2, pp. 560-570, 2007.
- [68] D.Y. Chang, "Extent Analysis and Synthetic Decision Optimization Techniques and Applications," *World Scientific, Singapore*, Vol. 1, pp. 352, 1992.
- [69] S. Kumar, D. Liu, "Impact of Globalization on Entrepreneurial Enterprises in the World Markets," *International Journal of Managements and Enterprise Development*, Vol. 2, pp.46-64, 2005.
- [70] Y.Y. Chen, J.C. Lu, J. K. Jan, "A Novel Design of Authentication-as-a-Services (AaaS) Architecture in Cloud Computing," *Journal of Computers*, Vol. 24, No. 3, pp. 19-25, 2013.
- [71] T.K. Chang, J.S. Huang, "Design and Implementation of a Secure Service-Oriented Workflow Platform," *Journal of Computers*, Vol. 24, No. 4, pp. 2-11, 2014.