

**Gender, age and marital status as predictors of managerial competency needs:
Empirical evidence from a Sri Lankan telecommunication service provider**

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Purpose- To investigate the factors that predict competency needs of managers using quantitative methodology.

Design/methodology/approach- For the study, 31 individual competencies were analysed. The study is confined to a fully integrated telecommunication service provider; 198 managerial employees participated in the survey.

Findings- Marital status, age and gender have significant main effects in predicting competency needs. The results also revealed significant interaction effects among the variables of marital status and the number of subordinates, and marital status and gender in predicting competency needs.

Originality/value- Though there is an enormous diversity in the scope of competency literature, a few empirical research studies have been conducted on the predictors of management competency requirements. Further, a limited number of competency studies have been conducted in Asia. Hence, empirical research studies are needed to fill this lacuna in literature.

Keyword(s): Managerial competencies, competency gaps, gender, Sri Lanka.

Paper type: Research paper

Introduction

In a rapidly changing work environment, increased focus on the customer and rapid response to problems and opportunities make the manager a vital resource in guiding and directing front-line workers to success (Hay Group, 2001). Further, for a sustained personal development, an expansion of a person's capacity to be effective in managerial roles becomes vital (Davis et al., 2004; Jackson et al., 2003; Tubbs and Schulz, 2006). In this regard, the competency approach marks a new development (Matthewman, 1995).

Competency frameworks are used in the organizational context to guide decision-making. For instance, competency gap analysis can identify the needed competencies by a job role, project, or organizational strategy. Once competency gaps were identified, if necessary, appropriate strategies could be taken to eliminate gaps (Draganidis and Mentzas, 2006; Rothwell and Wellins, 2004; Rowe, 1995; Schippmann et al., 2000). A competency framework helps align the HR system vertically with the organization's strategic objectives and horizontally with other HR functions, where it provides a tool for selection, performance management, human resource development (HRD), and career management. Hence, the importance given to competencies in the organizational context is increasing continually (Horton, 2000; Lawler 1994; Matthewman, 1995; Rees and Garnsey, 2003). This is to a large extent driven by business and human resources agendas to deliver business performance by improving the performance of individual managers (Engle et al., 2001; Harvey et al., 2000; Heffernan and Flood 2000).

For several reasons, research into the competency needs of managers of an Asian developing country, Sri Lanka, is important. First, though there is an enormous diversity in the scope of competency studies a few studies have analysed the impact of competency-based methodologies on HRD (Rothwell et al., 1999). Further, though competencies play an increasingly prominent role in education and training field (Camuffo and Gerli, 2004; Hansson, 2001; Kersh and Evans, 2005; Tovey, 1994, 2006), developing competencies that match job requirements have become an issue in HRD in any context (Hansson, 2001). Second, despite the increasing popularity of competency frameworks among practitioner, an accurate measurement of competencies is a key issue (Lievens et al., 2004; Markus et al., 2005). Several academic literature propose that competency needs should be identified in terms of gaps or deficits. This is because a gap derives real needs while reducing managers' subjectivity and preference in identifying competency needs. However, a few empirical studies have been conducted treating competency needs as gaps

(Barber and Tietje, 2004; Chen et al., 2005; Hansson, 2001). Third, literature suggests that competency levels could be influenced by individual and contextual factors (Agut et al., 2003). Some of such factors are age, gender, the level of education, motivation to learning, attitudes toward the usefulness of training, job tenure, and industrial sector of the firm (Agut et al., 2003; Guthrie and Schwoerer, 1994; Hunter and Hunter, 1984; Swierczek and Carmicheal, 1985). Further, it could be assumed that though individual and contextual variables are independently related to competencies, their interaction could also be significant in competency measurement. While the measurement of single variables to identify main effects is somewhat simpler, it would fail to provide an adequate explanation. However, no prior research has studied the interactions between individual and contextual variables and competency needs. Therefore, investigations on competencies would be incomplete if proper attention has not been paid to individual and contextual predictors and their interactions. Finally, the most of the research-led literature on competency area are based in the Western context or in newly industrialized countries and there is a marked absence of research-led literature in this regard for developing countries (Chen et al., 2005; Han et al 2006; Xiao, 2006; Zhu et al., 2000). Therefore, the research will contribute to the understanding of effective HRD strategies to address competency needs in developing countries.

In the above context, the focus of this article is to present, compare and discuss the results of an empirical investigation into the predictors of managerial competencies in the South Asian context, Sri Lanka, in particular. The specific aims of the article are 1) to investigate the perceived levels of current expertise and future importance of different work-related competencies and to derive competency needs in terms of gaps, and 2) to identify individual and contextual variables that predict competency needs. As an initial attempt, this research investigated the ways in which five individual variables, namely, age, gender, marital status, tenure and the level of education, and one contextual variable, namely the number of subordinates, shape individuals' competency needs. It is expected that though these six variables

would independently related to the level of competency needs, their interaction would also be significant in predicting the level of competency needs. In order to provide the context for the article, in the next section, relevant literature is briefly reviewed. This is followed by the methodology adopted. Subsequently, the main findings are presented and discussed. The article concludes with a discussion on the implications of the findings and research areas for further inquiry and understanding.

Theoretical background

Competency

The term “competency” was first used in the managerial context in the research conducted by Boyatzis (1982) in the late 1970s in the USA to identify the characteristics which distinguish superior from average managerial performance. Boyatzis adopted the term “competency”, plural “competencies”, which he described as an underlying characteristic of an individual that is causally related to effective or superior performance in a job (Boyatzis, 1982). The study concluded that there was no single factor but a range of factors that differentiated superior from average performers. These included personal characteristics, experience, motives and other attributes. Since then there is extensive literature in industrial and organizational psychology representing many decades of research into competency within the organizational context.

In literature, the term competency is attributed multiple meanings depending on the context and perspective (Garavan and McGuire, 2001; Viitala, 2005). For instance, a "competency" is seen as an input or an output of human behaviour. In the United Kingdom competencies are viewed as outputs: employees display competencies in the degree to which their work meets

or exceeds prescribed work standards. In the United States, competencies are seen mainly as inputs: they consist of clusters of knowledge, attitudes and skills that affect an individual's ability to perform (Brophy and Kiely, 2002; Cheng et al., 2003; Heffernan and Flood, 2000; Stuart and Lindsay, 1997). Elkin (1990) suggests that while US approach seems to deviate from the everyday reality of the most of the jobs, adopting UK approach has to face the task of training in all of the hundreds of identified job elements. As each approach has its own strengths, those should be regarded as complementary (Stuart and Lindsay, 1997). Hence, Stuart and Lindsay (1997) emphasized the need of a comprehensive framework for understanding and working with managerial competencies.

In recent years, one of the emerging themes is that of competencies and their role in helping organizations to cope with the changing environment. In this regard, competency based approach puts the human being at the centre of attention and underlines the importance of human resources to reach the objectives of the organization (Antonacopoulou and FitzGerald, 1996; Heffernan and Flood 2000; Hondeghem and Vandermeulen, 2000). Therefore, competencies should be the common language of the human resource system which enables the organization to match its human resources against the resources it needs (Woodruffe, 1991). Competency based approaches can facilitate in the identification of skills, knowledge, behaviours and capabilities needed to meet current and future human resource needs in alignment with the strategies and organizational priorities and can focus on the individual and group development plans (Draganidis and Mentzas, 2006). In this regard, a key integrative concept here has been that of occupational competence, especially managerial competence. The underlying thrust here has been the recognition that organizational effectiveness is in part related to the performance of the organization's managers, a conception given some support by the research conducted by Boyatzis (1982). Therefore, given the discussion above, by

competency in this study is meant input measures in the manner suggested by Boyatzis (1982) and Spencer and Spencer (1993) rather than outputs. As the findings of this study could have individual development focus, the definition given by Hay Group (2001) was used, i.e., “competency is a measurable characteristic of a person that is related to effective performance in a specific job, organization or culture. These characteristics are defined in terms of behaviours. Because competencies are behavioural, they can be developed” ([www.hayresourcedirect.Hay group.com](http://www.hayresourcedirect.Haygroup.com)).

Competency gaps

It is important to identify which particular set of key individual competencies are required for a business to achieve its strategic goals. Equally vital is the ability to “health-check” those competencies on a regular basis (Homer, 2001). In this regard, it is important to know whether a manager possesses the required competencies to achieve successful job performance. Several academic literature propose that competency needs should be identified in terms of gaps (Agut et al., 2003; Barber and Tietje, 2004; Scholes and Endacott, 2003). A discrepancy or a gap arises when a competency an individual possesses is lower than what is required for the job performance (Agut and Grau, 2002; Boydell and Leary, 1996; Goldstein, 1991; Moore and Dutton, 1978). However, only a few empirical studies have been conducted treating competency needs as gaps (Barber and Tietje, 2004; Chen et al., 2005; Hansson, 2001). Further, Antonacopoulou and FitzGerald (1996) state that there is a danger if organizations concentrate on the competencies of the past rather than on competencies of tomorrow. Hence, a competency framework should reflect competencies that are required for a business to achieve its strategic goals (Prahalad and Hamel, 1990). Therefore, in the study a competency deficit or competency need is defined as the gap between the current and

required level of a competency for the successful job performance. Though a perceived gap could sometimes be an expression of preference (Latham, 1988), such information is useful in making organizational strategic decisions (Hansson, 2001). For instance, once competency gaps were identified, if necessary, an organization could address those through appropriate strategies such as training, job enrichment, job content innovation, job redesign, and enhancement of the organizational climate (Goldstein, 1991; Naquin and Holton, 2003; Tharenou, 1991; Wright and Geroy, 1992).

The literature also highlights that the competency studies need to take into account several factors such as the type and level of the job, individuals' tenure, the current needs of organization and needs of individual (Elkin, 1990). For instance, Saeed and Mahmood (2002) in their study identified gender differences in competency levels of Pakistani primary school teachers. Agut et al., (2003) found job tenure is positively linked to competency levels while age and the number of subordinates do not show any significant relation to competency needs of managers in Spanish hotel industry. Though specific competency studies that investigated the influence of individual and contextual factors on levels of competencies is rare, studies focused on training needs analysis have shown that self-assessed managerial training needs are influenced by individual and contextual factors. For instance, Swierczek and Carmichael (1985) found that age and education were negatively related to training needs. Older managers and the ones with higher education level perceived themselves more trained than the younger and less educated ones. The number of subordinates is also related to training needs. Guthrie and Schwoerer (1994) found that managers with larger number of subordinates perceived more training needs than otherwise. Based on these studies, it is possible to assume that individual and contextual factors are also related to managerial competency needs in a similar direction.

Measurement issues with the competency approach

Though the popularity of competency frameworks among practitioners increasing, scientific community has regarded competency studies with some degree of scepticism (Lievens et al., 2004). The validity of “competencies” as measurable constructs appears to be at the core of this controversy (Lawler, 1994; Schippmann et al., 2000; Tett et al., 2000). Content validity means that the list of competencies used for the study is a representative sample of the universe of interest. Face validity means that the competencies are accurate and appropriate as judged by their users. In this regard, Hayes et al. (2000) argue that the lists of competencies will always be incomplete. They cite examples of studies where managers have not been able to describe all the competencies required for a job. Construct validity emphasizes the importance of operationalizing competencies so as to observe and measure (Markus et al., 2005). In criterion validity, the importance of measuring competencies accurately is emphasized. However, the way competencies are operationalize and measure depend on how those will be used.

Method

Population and sample

The study is confined to a fully integrated telecommunication service provider, identified as X Company. It has become the leading company in the industry in Sri Lanka. According to the monthly human resource report as at July 2006, X Company has more than 6,000 employees in total. Specifically, there were 541 managerial level employees, 1026 middle level technical employees, 1279 clerical and aligned employees, 605 call centre employees,

2,232 technical employees, 358 non-technical employees and 290 drivers as the total number of permanent employees. Of the total employees (6331), 2484 attached to headquarter while 3847 attached to regional offices island wide. The average age of the employees is 42.

Managerial level employees of X Company were considered as the sampling frame of the study. Of the 541 managerial employees, 510 were contactable during September 2006 when the survey was conducted. The questionnaire was distributed through e-mail and printed form. The questionnaire was voluntarily completed and returned by 203 subjects within 4 weeks of initial questionnaire distribution. A total of 198 usable responses resulted in 39 per cent response rate. 198 respondents came from seven functional areas, namely, Finance, IT, Marketing, HR & Administration, Legal, Planning & Corporate Strategy, and Operations; the sample is representative of the population. Of the 198 respondents, 70 per cent were males and 30 per cent were females while 85 per cent was married and 15 per cent were single. Cross tabulation of respondents by gender and marital status revealed that 88 per cent of the males and 76 per cent of females were married. The mean age was 40 years. 85 per cent of the sample reported having a Bachelors or postgraduate level university education. The current job tenure in X Company was 13 years on average while the current job tenure in X Company in the current field of specialization was 7 years on average. On average, there were 9 subordinates directly reporting to each respondent.

Measures

To achieve the purpose of the study, the identification of competencies is the foundation. After reviewing relevant literature on the identification of competencies (Barber and Tietje, 2004), for the current study, five-step methodology was adopted to identify competencies that

define a successful manager. First, a comprehensive list of competencies was created that were taken from competency literature. Second, in order to standardize the terminology of competency items, a list of 107 competencies was summarised that are abstracted from various sources in literature. This list was considered as the hypothesized list of competencies. As the third step, a panel of industry experts from the telecommunication industry was consulted to rank the importance of each competency for managers in the telecommunication industry from the hypothesized competency list created. To ensure that the competencies that are going to be required of managers are valid and useful, as the fourth step, a randomly selected team of managers from the telecommunication industry was consulted to rank the importance of each competency for managers in the telecommunication industry from the hypothesized competency list created. It was decided to take the competencies that are consistently rated of great importance by the two panels. Therefore, as the final step, the initial lists along with the ranks given by the two panels were independently analysed by the two researchers to identify the most important competencies and to eliminate duplicates. The final list comprised of 31 competencies and reflected the absolute minimum number of areas in which capabilities are required for superior performance in a job.

Self-evaluation method of personal competencies was used in the research (Agut et al., 2003; Camuffo and Gerli, 2004; Hayes et al, 2000). The self-administered questionnaire was chosen as the mode for data collection using a Likert scale to assess the current and future competency levels according to 31 competencies. Therefore, each respondent documented the perceived level of current competencies possessed and perceived level of competency requirements for future success on each of the 31 work-related competencies.

The size of the each competency gap was established by measuring the difference between the level of competency currently possessed by respondents and the level of competency requirement for future success for each competency. Following the criterion proposed by Agut and Grau (2002) and Agut et al. (2003), three types of competency gaps were identified: negative gap (the present competency level is lower than that required: value \leq -.51); adjustment margin (the present competency level is lower but close to that required: $-50 \leq$ value \leq .5); and positive gap (the present competency level is higher than that required: value \geq .51).

This research is conducted as an independent study of the authors for academic purposes. Therefore, the questions in the questionnaire were designed by the authors and those did not address specific organizational interests. Further, participants were briefed the aims of the study prior to questionnaire distribution and their responses were anonymous. The self-administrated survey questionnaire was pre-tested prior to distribution. The pre-tested survey questionnaire after amendments was administered among the respondents as detailed in the section on population and sample.

Methods of data analysis

Data analysis was carried out by using SPSS statistical programme. In addition to descriptive statistics, paired sample t-test and exploratory factor analysis (principal components analysis-Varimax rotation) were used. Person correlation analysis was conducted to identify the relationships among variables. To identify main and interaction effects of individual and contextual variables, the analysis of variance (General Linear Model) was performed. First,

variables were tested for the main effects and thereafter two-way and three-way interactions were tested. Profile plots were used to show the main and interaction effects figuratively.

Results

The results relating to competency needs by total sample and gender are summarized in Table 1. For example, the competency gap of “empathy with people” was derived by subtracting future importance of the competency “empathy with people” by current expertise of the competency “empathy with people”. The results of the t-test by total sample and gender are also shown in Table 1. The differences in mean values are significant for all the constructs. This suggests that managers regard competencies as important for the current business environment, but exhibited greater potential importance of the same in the future. This might be due to the uncertainty of the future competencies for managers in the telecommunication industry.

Insert Table 1 about here

To identify whether the gap between, for example, technical competence (which was the most highly ranked area needing improvement for total sample) and empathy with people (which was the least often ranked as area needing improvement for total sample) is significant, another series of paired sample t-tests could be conducted. Table 2 shows the results of such an analysis by total sample and gender. However, the combinations of competencies that could be selected for such an analysis is huge. Therefore, paired sample t-test was run on few selected variables. These variables were selected considering the values

of perceived gap and the nature of gap. The results shown in Table 2 reveal that there is a wider gap between expertise and importance for some competencies relative to others.

Insert Table 2 about here

The results of the principal component analysis are summarized in Table 3. The individual competencies were made up of five factors, and each of them is also sufficiently internally consistent.

Insert Table 3 about here

The correlations among five competency factors and individual and contextual variables are shown in Table 4.

Insert Table 4 about here

Figure 1 shows the summarized results for the predictors of competency needs. For competency factor 1, there is a significant main effect for marital status ($p < .05$) where married respondents do not reveal much competency needs compared to “single” respondents. In addition, significant interaction effects for gender and age ($p < .05$) and marital status and age ($p < .01$) were also found for factor 1. These effects are shown in Figure 2. For competency factor 2, there is a significant effect for marital status ($p < .01$) where married respondents do not reveal more competency needs compared to “single” respondents. For

competency factor 3, there is a significant effect for gender but it is significant at .10 level ($p < .10$) where male respondents do not reveal more competency needs compared to females. For competency factor 4, there is a significant main effect for the number of subordinates ($p < .05$), where respondents with less than 7 subordinates do not reveal much competency needs compared to respondents with more than 7 subordinates. In addition, significant interaction effects for the number of subordinates and marital status ($p < .01$), and the number of subordinates, marital status and gender ($p < .01$) were also found for factor 4. These effects are shown in Figure 3. For competency factor 5, there is a significant effect for age ($p < .05$) where respondents in the age group of 36 - 45 showing more competency needs than respondents in the age groups of 26-35 and 46 or above. However, the highest level of education and years of service in the current field were not related to any of the competency factors (Figure 1).

Take in Figure 1

Take in Figure 2

Take in Figure 3

Discussion

The study identified a list of competencies to a group of managers in a Sri Lankan telecommunication firm. One of the main features of the current study is the usage of self-reporting method to assess competency levels. The each participant was asked to rate his/her own perceived current level of expertise and future importance of each of the 31 work-related competencies. The responses led to identify individual competency gaps as the perceived

difference between requirements and the extent to which these are possessed. When self-reports accurately reflect an individual's levels of competence, an aggregation of these perceptions is possible. Hence, from a theoretical viewpoint, this study makes a small contribution to the analysis of managerial and organizational capabilities in terms of competencies. Further, the findings of the study could be used to assist in both organizations and individuals to apply strategic decisions in managing individual careers.

The findings suggested three possible methods of interpreting competency gaps. 1) As differences between individual gap ratings. For example, "technical competence showed the highest gap for total sample while empathy with people showed the lowest competency gap for total sample" (Table 1). 2) There is a possibility to compare across gap scores. For example, "there is a significant difference in the gap between technical competence and empathy with people for total sample. This might suggest that addressing the wider gap in technical competence is more important than addressing the narrow gap in empathy with people" (Table 2). 3) The results of the factor analysis led to suggest different collections of competencies (Table 3). Therefore, if training is seen as a possible strategy to address competency needs, it is important to ensure that individual training plans are linked to competency gaps of the individuals. In this regard, this gap analysis method of the identification of competency needs could be used to match the needs to training interventions. Such a link between competencies and training interventions add value to users and they could identify what training is needed in order to develop required competences. However, while competency lists may provide useful guidelines for the design of training programmes it would be erroneous to assume that either all of the competencies included in a programme will be relevant for all managers or that a manager who develops all of these competencies to a satisfactory standard will be competent to perform a particular managerial role effectively.

Further, competency requirements are linked to individual and contextual variables. The results of the GLM led to suggest that gender, marital status, age, and the number of subordinates are independently related to competency needs as well as their interactions are significant in competency needs identification. Overall, the findings of this study is different to the findings of Agut et al's (2003) study where they found that age and the number of subordinates do not significantly predict competency needs of managers in Spanish hotel industry. Like Saeed and Mahmood's study (2002), this study also found gender as a predictor of competency levels. Further, similar to Swierczek and Carmichael's (1985) study, this study also identified age as a predictor of the managerial competency needs where older managers do not reveal much competency needs compared to younger managers. Furthermore, like Guthrie and Schwoerer (1994), this study also identified the number of subordinates as a predictor of competency need where respondents with a large number of subordinates perceived more competency needs than otherwise. In this regard, one can argue that factors such as the number of subordinates would be associated with competency needs of managers from more technical fields like telecommunication than to the other ones. This implies that some competency needs vary from one specific industry to another.

Implications

The findings of the study have several implications. To achieve the expected results, the base is the identification of strategic competencies (from a set of individual competencies) that would be most important for the organization's competitive and strategic success. Therefore, first, organizations adopting a competency approach must create a competency model through a systematic process of data collection, at individual and organizational level.

Second, an operational definition for each competency and sub-competency has to be developed, together with measurable or observable performance indicators or standards against which to evaluate individuals (Markus et al, 2005). Third, because the outcome serves as the foundation for making vital HR decisions, it must be ensured that the competencies required of employees are valid and useful. However, the study relied on individuals self assessment of individual competencies. It could be assumed that some individuals could consistently give higher (or lower) estimates of the importance of the items as well as higher (or lower) estimates of their own competence. Further, it could further assume that not all competencies are judged equally important for performing a specific job. In this regard, the validation of competencies becomes vital because competencies describe normative behaviours, behaviours the organization wishes to promote and develop to enhance organizational effectiveness. Forth, the study proposed an operative method to analyse individual competency needs in terms of gaps. The findings of the study imply that as long as the profile of individuals are known along with their levels of competencies, finding the ways in which to address competency needs would not be difficult. Fifth, once diagnosed the most important competencies it is necessary to target and develop them continuously (internally) and measure the improvements. This implies the need of having performance measurement systems which are as objective and robust as possible. However, a number of business pressures and uncertainty in the business environment will create the need for new sets of competencies in organizations.

To sum up, when self-reports accurately reflect an individual's levels of competencies those could be used to assist in both organizations and individuals to apply strategic decisions in managing individual careers. The study proposed three possible methods of interpreting competency gaps. Further, the findings led to suggest that competency requirements are

linked to individual and contextual variables. Therefore, as long as the profile of individuals and related contextual factors are known along with their levels of competencies, addressing competency needs would not be difficult. However, as few empirical studies were conducted on the predictors of managerial competency needs yet, this warrant more studies in this area in different industrial sectors and geographical locations.

Limitations and areas for future research

All the participants worked for a single firm belongs to telecommunication sector. The findings of the study could be generalizable to any other telecommunication service provider. Further, the predictors identified in this study are not similar to the findings of Agut et al's (2003) study. Therefore, similar studies could be conducted in any other industrial sector. In this regard, the methodology adopted could be applied to any other organization or sector to identify competencies. Further, for the study, competencies were defined simply, as a headline plus a few sample behaviours- competency definitions used do not cater for multiple levels of detail and mastery. Therefore, it could be argued that it is unlikely that accurate evaluation is possible. However, the way competencies are defined will depend on how competencies will be used and the purpose of the study. Future studies could also investigate other individual and contextual predictors such as role perceptions, job characteristics, employment arrangement and previous participation on training and development programmes.

Reference

Agut, S., & Grau, R. (2002) Managerial competency needs and training requests: The case of the Spanish tourist industry, *Human Resource Development Quarterly*, Vol.13, No.1, pp 31-51.

Agut, S., Grau, R., & Peiró, J.M. (2003) Individual and contextual influences on managerial competency needs, *Journal of Management Development*, Vol 22 No10 pp. 906-918

Antonacopoulou, E.P., & FitzGerald, L. (1996) "Reframing competency in management development", *Human Resource Management Journal*, Vol. 6 No.1, pp.27-48.

Barber, C.S., & Tietje, B.C. (2004) Competency requirements for managerial development in manufacturing, assembly, and/or material processing functions, *Journal of Management Development*, Vol. 23 No. 6, pp. 596-607

Boyatzis, R.E. (1982) *The Competent Manager – a Model for Effective Performance*, Wiley, New York

Boydell, T., & Leary, M. (1996) *Identifying training needs*, Institute of Personnel and Development, London.

Brophy, M., & Kiely, T. (2002) Competencies: a new sector, *Journal of European Industrial Training*, Vol 26 No 2, 3 &4, pp. 165-176

Camuffo, A., & Gerli, F. (2004) An integrated competency based approach to management education: an Italian MBA case study, *International Journal of Training and Development*, Vol 8 No 4, pp 240-257

Chen, A.S., Bian, M., & Hom, Y. (2005) Taiwan HRD practitioner competencies: an application of the ASTD WLP competency model, *International Journal of Training and Development*, Vol 9 No 1, pp-21-32

Cheng, M., Dainty, A.R.J. & Moore, D.R. (2003) "The differing faces of managerial competency in Britain and America", *Journal of Management Development*, Vol. 22 No.6, pp.527-537.

Davis, P. Naughton, J. & Rothwell, W. (2004) New roles and new competencies for the profession: are you ready for the next generation? T+D, April.

Draganidis, F., & Mentzas, G. (2006) Competency based management: a review of systems and approaches, *Information Management & Computer Security*, Vol 14 No 1, pp. 51-64

Elkin, G. (1990), "Competency-based human resource development", *Industrial and Commercial Training*, Vol. 22 No.4, pp.20-5.

Engle, A.D., Mendenhall, M.E., Powers, R.L., & Stedham, Y. (2001) Conceptualizing the global competency cube: a transnational model of human resource, *Journal of European Industrial Training*, Vol 25 No 7, pp. 346-353

Garavan, T.N., & McGuire, D. (2001), Competencies and workplace learning: some reflections on the rhetoric and the reality, *Journal of Workplace learning*, Vol. 13 No.3 & 4, pp.144-63.

Goldstein, I. L. (1991) 'Training in work organizations', in Dunnette, M. D. and Hough, L. M. (eds) *Handbook of Industrial and Organizational Psychology*, Vol. 2, Consulting Psychologists Press, California, 507–620.

Guthrie, J.P. & Schwoerer, C.E. (1994), Individual and contextual influences on self-assessed training needs, *Journal of Organizational Behavior*, Vol. 15 pp.405-22.

Han, J., Chou, P., Chao, M. & Wright, P.M. (2006) The HR competencies-HR effectiveness link: A study in Taiwanese high-tech companies, *Human Resource Management*, Vol 45 No3, 391-406

Hansson, B. (2001) Competency models: are self-perceptions accurate enough?, *Journal of European Industrial Training*, Vol 25 No 9, pp. 428-441

Harvey, M.G., Novicevic, M.M., & Speier, C. (2000) An innovative global management staffing system: A competency-based perspective, *Human Resource Management*, Vol 39, No 4, pp381 – 394.

Hay Group (2001) The Manager Competency Model, www.hayresourcedirect.haygroup.com.

- Hayes, J., Rose-Quirie, A. & Allinson, C.W. (2000) Senior managers' perceptions of the competencies they require for effective performance: implications for training and development, *Personnel Review*, Vol 29, No 1, pp 92-105.
- Heffernan, F., & Flood, P (2000) An exploration of the relationships between the adoption of managerial competencies, organisational characteristics, human resource sophistication and performance in Irish organisations, *Journal of European Industrial Training*, Vol. 24 No.2/3/4, pp. 128-36.
- Homer, M. (2001) Skills and competency management, *Industrial and Commercial Training*, Vol 33 No 2, pp. 59-62.
- Hondeghem, A., & Vandermeulen, F., (2000) Competency management in the Flemish and Dutch civil service, *International Journal of Public Sector Management*, Volume 13 Number 4 2000 pp. 342-353.
- Horton, S. (2000) Introduction – the competency movement: its origins and impact on the public sector, *International Journal of Public Sector Management*, Vol 13 No 4, pp. 306-318.
- Hunter, J.E. & Hunter, R.E. (1984), Validity and utility of alternative predictors of job performance, *Psychological Bulletin*, Vol. 96 pp.72-98.
- Jackson, S., Farndale, E., & Kakabadse, A. (2003) Executive development: meeting the needs of top teams and boards, *Journal of Management Development*, Vol.22 No.3, pp.185-265.
- Kersh, N. & Evans, K. (2005) Self-Evaluation of Tacit Skills and Competences of Adult Learners Facilitating Learning Success and Work Reentry, *European Education*, Vol. 37, No. 2, pp. 87–98.
- Latham, G. P. (1988) Human resource training and development, *Annual Review of Psychology*, Vol 39, pp545–589.
- Lawler, E. (1994), From job-based to competency-based organizations, *Journal of Organizational Behaviour*, Vol. 15 pp.3-15.

- Lievens, F., Sanchez, J.I., & De Corte, F. (2004) Easing the inferential leap in competency modeling: the effects of task-related information and subject matter expertise, *Personnel Psychology*, 57, 881–904
- Markus, L.H., Cooper-Thomas, H.D., & Allpress, K.N., (2005) Confounded by Competencies? An Evaluation of the Evolution and Use of Competency Models, *New Zealand Journal of Psychology*, Vol. 34, No. 2, July Pp 117-126.
- Matthewman, T (1995) Trends and development in the use of competency frameworks *Competency*, Vol.2 No.4, pp.1-20.
- Moore, M. L., & Dutton, P. (1978) Training needs analysis: Review and critique, *Academy of Management Review*, Vol 3, pp532–545.
- Naquin, S.S. & Holton, E.F. (2003) Redefining state government leadership and management development: A process for competency based development, *Public Personnel Management*, Vol 32 No 1, pp23-46
- Prahalad, C, & Hamel, G (1990) Strategy as stretch and leverage, *Harvard Business Review*, .
- Rees, B. & Garnsey, E. (2003) Analysing Competence: Gender and Identity at Work, *Gender, Work and Organization*. Vol. 10 No. 5 pp-551-578
- Rothwell, W. J., Sanders, E. S. & Soper, J. G. (1999) *ASTD models for workplace learning and performance*. Alexandria, VA: American Society for Training and Development.
- Rothwell, W. J. & Wellins, R. (2004) Mapping your future: putting new competencies to work for you, *T+D*, May.
- Rowe, C. (1995) Clarifying the use of competence and competency models in recruitment, assessment and staff development, *Industrial and Commercial Training*, Vol 27 No 11 pp12-17
- Saeed, M. & Mahmood, K. (2002) Assessing competency of Pakistani primary school teachers in mathematics, science and pedagogy, *International Journal of Educational Management*, Vol 16 No 4, pp190-195.

- Schippmann, J.S., Ash, R.A., Battista, M., Carr, L., Eyde, L.D., & Hesketh, B. (2000) The practice of competency modeling. *Personnel Psychology*, Vol 53, pp703–740.
- Scholes, J., & Endacott, R., (2003) The practice competency gap: challenges that impede the introduction of national core competencies, *Nursing in Critical Care*, □Vol 8 No 2, pp 68-77
- Spencer, L.M., & Spencer, S.M (1993) *Competence at Work: Models for Superior Performance*, Wiley, New York, NY, .
- Stuart, R., & Lindsay, P. (1997) Beyond the frame of management competencies: towards a contextually embedded framework of managerial competence in organisations, *Journal of European Industrial Training*, Vol. 21 No.1, pp.26-33.
- Swierczek, F.W. & Carmichael, L. (1985), "Assessing training needs: a skill approach", *Public Personnel Management*, Vol. 14 No.3, pp.259-73.
- Tett, R. P., Guterman, H. A., Bleier, A., & Murphy, P. J. (2000) Development and content validation of a "hyperdimensional" taxonomy of managerial competence. *Human Performance*, 13(3): 205-251.
- Tharenou, P. (1991). Managers' training needs and preferred training strategies. *Journal of Management Development*, Vol 10 No 5, pp46–59.
- Tovey, L. (1994) Competency Assessment: A Strategic Approach – Part II, *Executive Development*, Vol 7 No 1, pp16-19
- Tovey, L., (2006) Meeting business and management training and development needs through competency assessment, *Strategic Change*, Vol 3, No 2, pp71 – 86
- Tubbs, S.L., & Schulz, E. (2006) Exploring a Taxonomy of Global Leadership Competencies and Meta-competencies, *The Journal of American Academy of Business*, Cambridge, Vol. 8 No. 2 pp29-34.
- Viitala, R. (2005) Perceived development needs of managers compared to an integrated management competency model, *Journal of Workplace Learning*, Vol 17 No 7 pp436-451

Woodruffe, C. (1991), "Competent by any other name", *Personnel Management*, September, pp.38-43

Wright, P. C., & Geroy, G. D. (1992) Needs analysis theory and the effectiveness of large-scale government-sponsored training programmes: A case study. *Journal of Management Development*, Vol 11 No5, pp16–27.

Xiao, J. (2006) Survey ranking of job competencies by perceived employee importance: Comparing China's three regions, *Human Resource Development Quarterly*, Vol 17, No 4, pp371 – 402.

Zhu, Y., Chen, I. & Warner, M. (2000) HRM in Taiwan: An empirical case study. *Human Resource Management Journal*, Vol 10 No 4, pp32–44.

Tables

Table 1: Current expertise, future importance, Gaps and t-test for gaps

Competencies	Total sample						Gender											
	Current expertise (Mean)	Future importance (Mean)	Gap*	t-test (2-tailed)			Current expertise (Mean)	Future importance (Mean)	Gap*	t-test (2-tailed)			Current expertise (Mean)	Future importance (Mean)	Gap*	t-test (2-tailed)		
				t	df	Sig				t	df	Sig				t	df	Sig
Empathy with people	4.09	4.36	AM	-3.82	185	0.000	4.12	4.35	AM	-2.67	128	0.008	4.00	4.38	AM	-2.70	55	0.009
Listening	4.10	4.46	AM	-5.01	188	0.000	4.07	4.47	AM	-4.86	132	0.000	4.16	4.40	AM	-1.75	54	0.085
Flexibility	4.18	4.59	AM	-5.70	188	0.000	4.20	4.57	AM	-4.35	131	0.000	4.21	4.63	AM	-3.82	55	0.000
Team player	4.19	4.62	AM	-6.92	188	0.000	4.21	4.61	AM	-5.57	131	0.000	4.14	4.63	AM	-3.94	55	0.000
Ethical	4.03	4.47	AM	-5.85	186	0.000	4.07	4.50	AM	-5.17	130	0.000	3.95	4.38	AM	-2.85	54	0.006
Positive vision	4.07	4.54	AM	-6.38	185	0.000	4.12	4.53	AM	-4.65	130	0.000	4.00	4.54	N	-4.69	53	0.000
Attitude to meet targets	4.28	4.71	AM	-7.45	186	0.000	4.35	4.71	AM	-5.65	129	0.000	4.14	4.73	N	-4.95	55	0.000
Safety focus	3.86	4.41	N	-8.22	189	0.000	3.88	4.38	AM	-6.07	132	0.000	3.80	4.48	N	-5.93	55	0.000
Empowerment ability	3.91	4.45	N	-7.29	187	0.000	3.92	4.47	N	-6.47	131	0.000	3.87	4.40	N	-3.39	54	0.001
Written communication	3.97	4.59	N	-9.50	184	0.000	4.05	4.59	N	-7.78	129	0.000	3.85	4.57	N	-5.52	53	0.000
Resiliency	3.98	4.59	N	-8.97	184	0.000	4.08	4.59	AM	-6.64	131	0.000	3.81	4.60	N	-6.21	51	0.000
Conflict resolution	3.73	4.34	N	-8.24	185	0.000	3.80	4.32	N	-6.44	129	0.000	3.62	4.36	N	-5.06	54	0.000
Planning and scheduling	4.02	4.61	N	-10.00	185	0.000	4.02	4.62	N	-8.82	131	0.000	4.00	4.60	N	-4.85	52	0.000
Negotiation	3.94	4.56	N	-8.85	187	0.000	3.93	4.51	N	-7.19	133	0.000	4.00	4.68	N	-5.17	52	0.000
Coaching ability	3.78	4.41	N	-8.21	183	0.000	3.84	4.42	N	-6.62	127	0.000	3.67	4.38	N	-4.85	54	0.000
Risk taking	3.79	4.39	N	-8.51	188	0.000	3.88	4.37	AM	-5.49	131	0.000	3.54	4.43	N	-7.89	55	0.000
Learning	3.94	4.59	N	-9.00	187	0.000	4.07	4.47	N	-4.86	132	0.000	4.16	4.40	N	-1.75	54	0.085
Oral communication	3.90	4.54	N	-9.45	189	0.000	3.94	4.56	N	-8.04	133	0.000	3.84	4.51	N	-4.98	54	0.000

Cost consciousness	3.82	4.49	N	-9.59	187	0.000	3.86	4.47	N	-7.43	132	0.000	3.76	4.56	N	-6.23	53	0.000
Holistic	3.79	4.45	N	-9.49	183	0.000	3.85	4.42	N	-6.67	129	0.000	3.60	4.51	N	-7.46	52	0.000
Change handling skills	3.84	4.55	N	-11.21	187	0.000	3.87	4.53	N	-8.60	132	0.000	3.72	4.59	N	-7.54	53	0.000
Quality focus	3.94	4.65	N	-11.69	188	0.000	3.98	4.64	N	-9.13	131	0.000	3.80	4.66	N	-7.26	55	0.000
Customer focus	3.89	4.56	N	-11.69	188	0.000	3.92	4.59	N	-8.14	130	0.000	3.83	4.55	N	-6.04	52	0.000
Time management ability	3.88	4.61	N	-9.67	186	0.000	3.96	4.64	N	-7.76	130	0.000	3.69	4.53	N	-5.81	54	0.000
Pressure management skills	3.75	4.50	N	-9.91	185	0.000	3.82	4.51	N	-7.66	130	0.000	3.63	4.48	N	-6.52	53	0.000
Strategizing ability	3.76	4.51	N	-10.30	185	0.000	3.87	4.52	N	-7.81	129	0.000	3.51	4.47	N	-6.78	54	0.000
Achievement orientation	3.90	4.64	N	-12.68	186	0.000	3.92	4.65	N	-10.31	130	0.000	3.82	4.62	N	-7.18	54	0.000
Customer relations knowledge	3.88	4.62	N	-11.99	189	0.000	3.86	4.59	N	-9.31	132	0.000	3.88	4.68	N	-8.03	55	0.000
Creativity	3.77	4.58	N	-12.33	185	0.000	3.81	4.62	N	-9.96	129	0.000	3.64	4.49	N	-7.11	54	0.000
Technology management	3.67	4.55	N	-12.92	188	0.000	3.80	4.56	N	-9.06	132	0.000	3.36	4.51	N	-10.89	54	0.000
Technical competence	3.75	4.68	N	-13.52	182	0.000	3.80	4.64	N	-9.71	128	0.000	3.60	4.81	N	-10.75	52	0.000

Notes:

*Agut and Grau (2002) and Agut et al. (2003).

Values of the standard deviation ranged between .57 (lowest) to 1.02 (highest).

For any of the competency variable normality distribution was not violated in running the t-test.

Table 2: Results of the paired sample t-test for gaps (on some selected competencies)

Pair	Competencies	Total sample				Gender							
		Nature of Gap	t-test (2-tailed)			Nature of Gap	Male			Nature of Gap	Female		
			t	df	Sig		t	df	Sig		t	df	Sig
1	Technical competence	N	-7.759	178	0.000***	N	-6.40	124	0.000***	N	-4.43	52	0.000***
	Empathy with people	AM				AM				AM			
2	Creativity	N	-5.947	184	0.000***	N	-4.45	129	0.000***	N	-3.88	53	0.000***
	Listening	AM				AM				AM			
3	Flexibility	AM	3.186	187	0.002**	AM	1.48	130	0.141	AM	3.64	55	0.001***
	Risk taking	N				AM				N			
4	Team player	AM	4.083	185	0.000***	AM	3.36	129	0.001***	AM	2.46	54	0.017**
	Time management ability	N				N				N			
5	Attitude to meet targets	AM	-1.986	182	0.049*	AM	-1.42	125	0.158	N	-1.54	55	0.129
	Empathy with people	AM				AM				AM			
6	Achievement orientation	N	-2.142	183	0.034*	N	-1.61	130	0.108	N	-1.27	51	0.209
	Planning and scheduling	N				N				N			

Note: * p<0.05; **p<0.01; ***p<0.001

Table 3: Factor analysis for competency gaps

Competencies	Factors				
	F1	F2	F3	F4	F5
Negotiation	0.558				
Listening	0.766				
Oral communication	0.602				
Flexibility	0.581				
Positive vision	0.534				
Cost consciousness		0.571			
Change handling skills		0.662			
Empathy with people		0.630			
Empowerment ability		0.608			
Holistic		0.618			
Customer focus		0.511			
Achievement orientation		0.501			
Attitude to meet targets		0.609			
Strategizing ability			0.532		
Quality focus			0.623		
Resiliency			0.648		
Risk taking			0.707		
Technical competence				0.704	
Technology management				0.665	
Safety focus				0.602	
Creativity				0.563	
Ethical				0.624	
Written communication					0.815
Percentage of variance	15.11	14.51	13.07	11.09	7.71
Cronbach's Alpha based on standardized items	0.809	0.885	0.806	0.785	-

Table 4: Correlations

Variables	1	2	3	4	5	6	7	8	9	10
1 Age	-									
2 Gender	0.027	-								
3 Marital status	0.300**	0.159*	-							
4 Highest educational qualification	0.414**	-0.045	-0.058	-						
5 Years of service in the specialised field in the current workplace	0.403**	0.042	0.343**	-0.120**	-					
6 Number of subordinates directly report	0.201**	-0.203**	0.212**	-0.071	0.124*	-				
7 F1	0.098	0.093	0.145*	0.001	0.089	-0.109	-			
8 F2	0.027	-0.016	0.263**	-0.021	0.170	-0.071	0.000	-		
9 F3	0.032	0.151*	-0.036	-0.022	0.021	-0.006	0.000	0.000	-	
10 F4	-0.105	0.149*	-0.092	0.068	-0.082	-0.156**	0.000	0.000	0.000	-
11 F5	0.114*	-0.150	0.113	-0.134	0.041	0.079	0.000	0.000	0.000	0.000

Notes: * p<0.05; **p<0.01

Figures

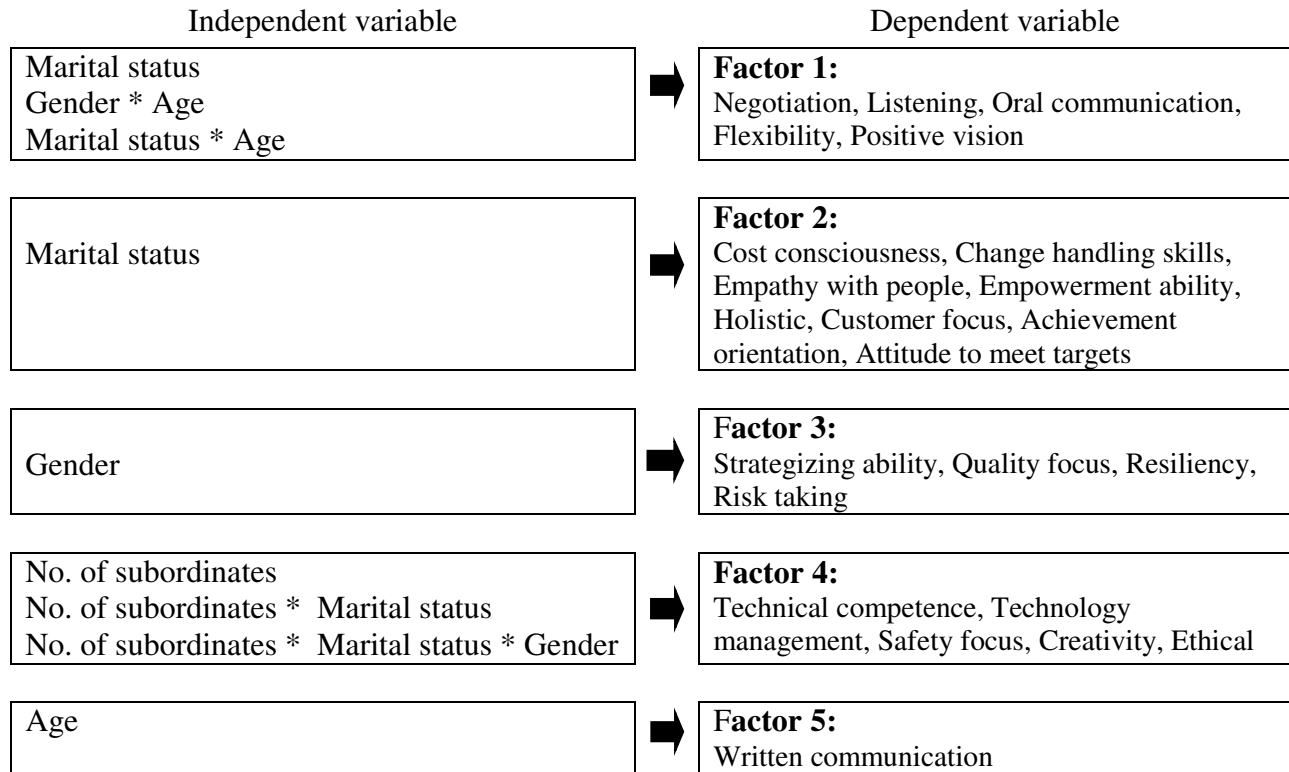
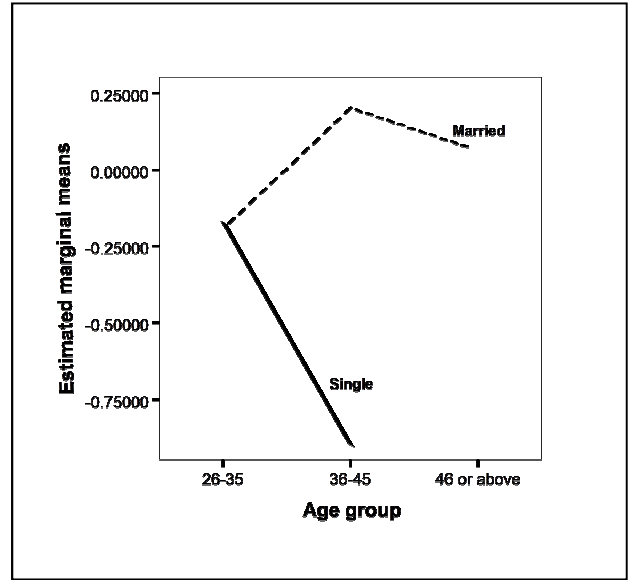


Figure 1: Predictors of managerial competency needs

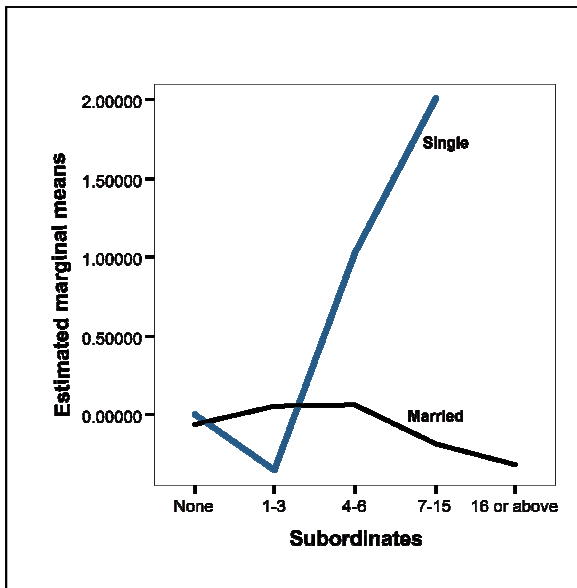


(a) Age and gender

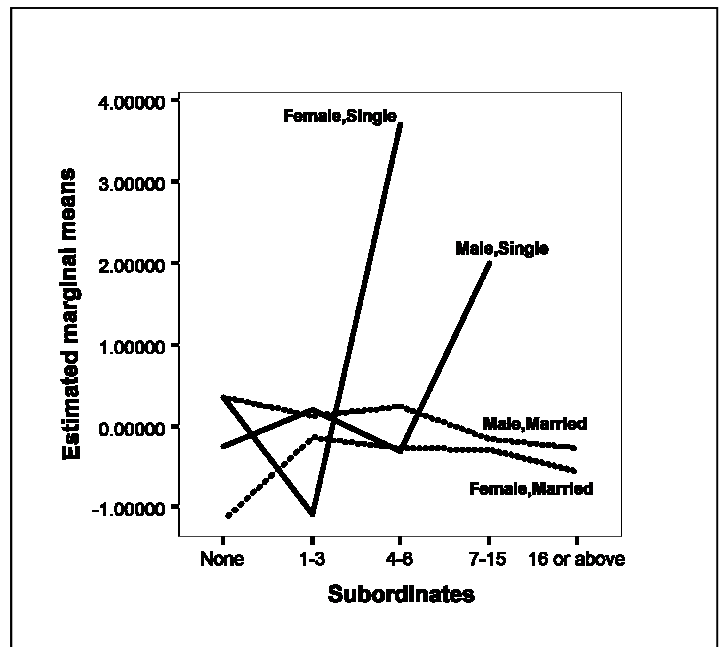


(b) Age and marital status

Figure 2: Competency factor 2- interactions between age and gender, and age and marital status



(a) Subordinates and marital status



(b) Subordinates, marital status and gender

Figure 3: Competency factor 4- interactions between subordinates and marital status, and subordinates, marital status and gender