

**Tones, Megan J. and Pillay, Hitendra K. (2007) Selection, Engagement and Disengagement of Learning Goals in Older Workers and their Respective Employers: Preliminary Findings in a Sample of Mature Age Australians. In Xiao, Mingzheng and Osman-Gani, Ahad and Yang, Baiyin and Gong, Jingli, Eds. Proceedings The Sixth Asian Conference of the Academy of HRD, 2007, Beijing, China.**

**Copyright 2007 (The authors)**

## **Selection, Engagement and Disengagement of Learning Goals in Older Workers and their Respective Employers: Preliminary Findings in a Sample of Mature Age Australians**

*Tones, M. & Pillay, H.  
Queensland University of Technology*

*The flexibility and universality of lifespan development psychology makes it an attractive framework to study workforce ageing. A questionnaire was administered to an older worker sample to address the applicability of this theory to HRD and HRM initiatives. Six subscales were identified in factor analysis that closely resembled the original conceptual model. Analysis of demographic data revealed that supervisory tasks and educational aspirations were related to selection of and engagement in learning and development activities.*

### **Keywords: Lifespan development psychology**

The ageing demographic in Asia and Australia poses a significant challenge to human resource management (HRM; McIntosh & Poikolainen, 2007). With the exception of Japan, Korea and Singapore, there has been a paucity of literature on the ageing workforce issues in Asia (Patrickson, 2001). For instance, ageing workers were found to be a significant HRM issue in Japan and Korea by Zanko (2003) in his analysis of contemporary HRM issues in Asian countries, and researchers in Singapore have investigated bridge employment opportunities for older workers (Lim & Feldman, 2003). However in the majority of Asian countries the importance of effective HRM, and staff development in particular, is acknowledged as the only solution to remain competitive in an increasingly technological and global market (Park & Gardner, 2004). It is estimated that by 2050 at least a third of the population in Japan, Australia, Korea, Singapore and China will be aged over 60 years (McIntosh & Poikolainen, 2007). So it is crucial for HRM to accommodate the needs of older workers to ensure their continued development. One potential solution is to incorporate the principles of lifespan development psychology (LDP) into HRM and human resource development (HRD). This article reports on the development of an instrument to measure learning and development goals and strategies of older workers, and their perception of organizational support for the same.

The cultural, social, economic and political differences between Asian countries preclude the use of a common HRM model (Zanko, 2003). Thus, a parsimonious framework that enables flexibility at micro levels may be of value to address older worker issues in HRM. Lifespan development psychology presents such a viewpoint, and has been discussed in the western literature with respect to older workers and organisational issues (Baltes & Dickson, 2001; Kanfer & Ackerman, 2004). Central tenants of LDP are as follows. Firstly, LDP encompasses cognitive, behavioural, social and biological development across the lifespan (Heckhausen & Schultz, 1999). Secondly, genetic, environmental and cultural factors reciprocally influence the development and adaptability of individuals across the lifespan (Heckhausen & Schultz, 1999b). Lastly, that development is plastic, or capable of growth, maintenance or decline (Staudinger, Marsiske & Baltes, 1993). While LDP is a western theory, there are cross cultural similarities in fundamental areas. Good physical and psychosocial health emerges as a crucial indicator of successful ageing cross culturally (Bowling, 2007). Age related biological phenomena including declined physical function and preservation of pragmatic function is also evident cross nations. Yet, factors such as rate of decline, life expectancy and the value attributed to functioning differ across cultures (Kendig, 2004).

There are four major theoretical viewpoints in LDP that attempt to explain how individuals grow and adapt across the lifespan. These are selective optimization with compensation (SOC; Baltes & Freund, 2003), the dual process model of self regulation (Brandstadter & Rothermund, 2002), optimization via primary and secondary control (Heckhausen, 2001), and socio-emotional selectivity theory (Castensen, Isaacowitz & Charles, 1999). The first theory, SOC, describes three underpinning processes that that guide development: selection, optimization and compensation. These three elements form the foundation of the subsequent models.

Selection refers to the process of choosing life domains in which to invest personal resources, time and effort in the form of goals (Freund & Baltes, 2002). From a HRD perspective, individuals may elect to focus their resources on career development. The selection process is further described in two modes: elective selection and loss based selection. Elective selection involves advancement in life domains, such as career development, aligned with psychological needs, personal resources and environmental opportunities. Selection in response to personal or environmental losses, such as changing jobs due to a sustained injury or being made redundant, fall into the category

of loss based selection (Freund & Baltes, 2003). Once a goal is selected, the individual strives towards achievement via optimization and compensation. The expression of these processes varies by context however optimization simply refers to the use of individual means to achieve the goal, while compensation refers to the use of alternative strategies for achievement in response to failing optimization. In a HRD setting, an individual who struggles to learn a new work task might ask a competent coworker for help after attempts to self teach have failed.

Brandtstadter and Rothermund (2002) conceptualize SOC in a similar way to Freund and Baltes (2002). In their model, the dual cognitive processes of assimilation and accommodation function antagonistically to regulate personal goals. Accommodation is similar to elective selection, and involves striving towards goals via individual shaping of the environment. For instance, an employee who wishes to be successful will form goals in line with their definition of success, and strive towards that ideal. Similar to loss based selection and compensation, accommodation becomes effective when assimilative efforts fail, and involves changing goals and self percepts in line with the reality presented in the external environment.

Optimisation via primary and secondary control (OPS) provides further additions to the SOC based frameworks described. Firstly, the selective process acknowledges developmental appropriateness with respect to life stage and the balance between specialization of goals and goal diversity (Poulin, Heckhausen & Haas, 2005). So, although this model does not contain an equivalent to loss based selection, it is maintained that adaptive development occurs via the selection of goals aligned with opportunities offered at current life stage, and alternate goals or 'backup plans' in case of goal failure. Unique in OPS is the goal disengagement process, which involves cognitive strategies to protect self esteem following goal failure via a loss in functioning or lack of opportunity. This process may be integral to learning and development for older workers, as participation rates decline with age (OECD, 2006).

Finally, socio-emotional selectivity theory places the individual into a social context. Specifically, this theory postulates that with advanced age or social endings, such as retirement, individuals increasingly prefer interactions that stimulate positive emotions, rather than knowledge development. However, culture may hold a strong influence over social aspects of learning in the workplace, and other aspects as well. Heckhausen and Schultz (1999b) speculated that individuals from collectivist cultures may collaborate on goals, rather than strive individually.

The aim of the current study was to construct a questionnaire to measure learning and development goal selection, engagement or striving, and disengagement in older workers with respect to the general elements of SOC. In addition, older workers' perceptions of organizational SOC strategies towards the support of their learning and development goals were also of interest. To inform the questionnaire, an integrated model of SOC was developed from the theoretical viewpoints described above. As shown in Figure 1, the goal selection and engagement processes are expected to be integrated within and between the individual and organization. Prior research supports the reciprocity of individual and environment in regards to learning and development, which is also a fundamental concept of lifespan developmental psychology (eg. Barab & Plucker, 2002). Less well understood are the processes of individual and organizational goal disengagement with respect to learning. Disengagement serves to preserve self esteem in response to failure or non participation via the use of cognitive processes listed in Figure 1. However, Poulin et al (2005) note that the disengagement process can be context specific.

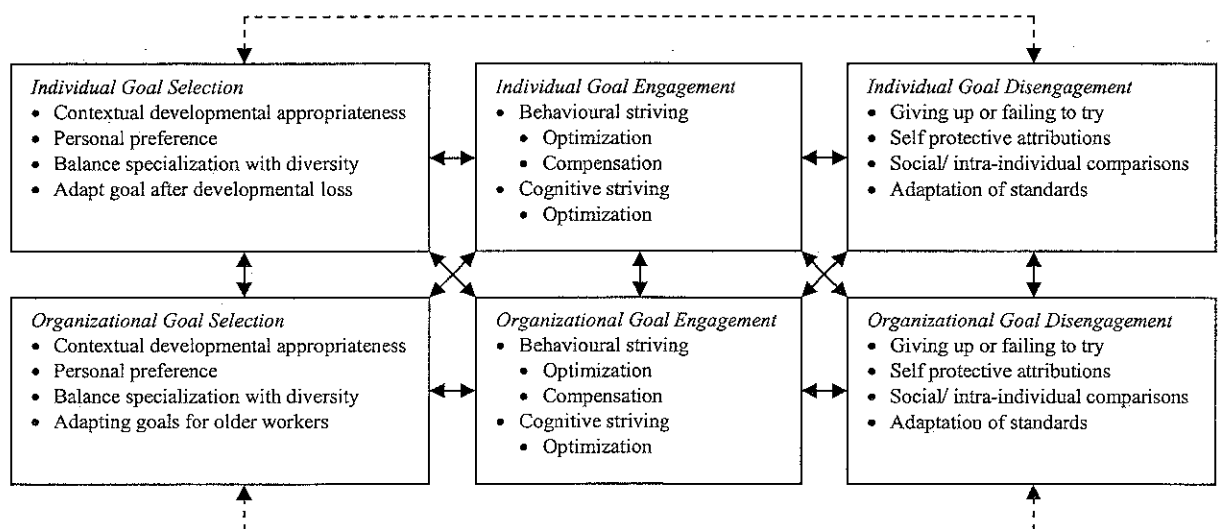


Figure 1. An integrated model of selective optimization with compensation incorporating the organization.

## Methodology

### Survey Development

A total of 113 items were developed for the Learning and Development Survey, based on the model constructs described above in Figure 1. Content validity analysis was conducted utilizing four experts, and the pool of items was reduced to 85 for the pilot version. A form to collect demographic data was also included.

### Sample

The Learning and Development Survey was distributed to LGAQ member councils in Cairns and Cooloola by the training and development manager. A total of 113 questionnaires were returned. Demographic characteristics of the sample are included in Table 1. Participation in other activities and future plans are included in Table 2. Percentages do not always total 100% due to some missing demographic data.

Table 1. *Demographic Variables*

Demographic Variable	%	Demographic Variable	%	Demographic Variable	%
Age		Occupation		Supervisor	
Less than 45	51.3%	Prof./ Manage.	29.2%	Yes	32.7%
Over 45	48.7%	Administration	34.5%	No	60.2%
Gender		Blue Collar	26.5%	Continue job aged 65	
Female	32.7%	Mode of Employment		Yes	45.1%
Male	35.4%	Full Time	81.4%	Yes, prefer not to	42.5%
Education		Part Time	5.3%	No	7.1%
Secondary		Casual	0.9%	Physical Demandingness	
Schooling	43.4%	Flexible	2%	Very Demanding	3.5%
Post School	56.6%	Fixed Contract	5.3%	Some Demanding	28.3%
Qualification		Permanent	6.2%	Neither	39.8%
Non English Speaking		Shift Work	0.9%	Some Undemanding	15.9%
Yes	13.3%	Other	3.5%	Very Undemanding	11.5%
No	61.9%	Department Size		Work Complexity	
Disability		Less than 5	10.8%	Very Complex	11.5%
Yes	8.8%	5-9	22.1%	Somewhat Complex	61.9%
No	89.4%	10-99	57.7%	Neither	17.7%
		More than 100	7.2%	Somewhat Simple	4.4%
				Very Simple	0.9%

Table 2. *Participation in Other Activities and Future Plans*

Participation in Other Activities	Ever	Never	Future Plans	Goal	Never
Voluntary/ charity work	70.9%	28.3%	Retire	94.6%	5.3%
Political/ trade union activity	20.8%	74.3%	Change jobs in same industry	69.8%	28.3%
Caring for/ educating own children	57.7%	38.9%	Obtain an educational qualification	78.4%	19.5%
Caring for elderly/ disabled relatives	41.0%	54.9%	Change jobs to a different industry	43.3%	52.2%
Cooking	96.3%	0%	Increase my work hours	15.5%	82.3%
Housework	98.2%	0%	Decrease my work hours	67.6%	31.9%
Taking a training or education course	84.3%	15%	Pursue an artistic or creative hobby	68.2%	30.1%
Sporting activity	87.2%	12.4%	Start my own business	46.7%	50.4%
Cultural activity	67.0%	31%	Pursue a sporting or leisure hobby	80.5%	19.5%
Leisure activity	94.5%	0%	Obtain a higher level position at work	74.1%	24.8%

### Analysis

An exploratory factor analysis was conducted to identify the factors of the Learning and Development Survey. Further reliability analyses were conducted to determine the internal consistency of the scale. Criterion validity was also assessed in terms of group differences in scores for demographic variables, other activities and future plans.

## Results

### *Missing data*

One case was deleted due to non completion of the Learning and Development Survey items. No more than 3.5% of the items were incomplete for all other cases, and there was a total of 49 incomplete scale items across all respondents (0.5%). In these cases the midpoint of the scale was input.

### *Factor analysis*

The 85 items were factor analyzed using the maximum likelihood factor analysis function on SPSS. The Kaiser-Meyer-Olkin measure of sampling adequacy was .53 and the Bartlett's test of sphericity was significant, both of which indicate suitability of the data for factor analysis. There were 21 factors with an eigenvalue exceeding 1.0, which is typically the cut off for the inclusion of factors (Tabachnick & Fidell, 2006). To reduce the number of factors, the scree plot and factor structure were examined in greater detail. The scree plot suggested either four or six factors, evidenced by a sudden decline in eigenvalues between factors 4 and 5, and 6 and 7. Unrotated, orthogonal and oblique rotations were observed, and a promax rotation was found to be the most conceptually meaningful. A six factor solution was accepted, as items that loaded onto factors 5 and 6 were conceptually unique to the items that loaded onto the first four factors. This decision was supported by Fabrigar, Wegener, MacCallum and Strahan's (1999) assertion that underfactoring produces greater error variance as conceptually different items may be forced to load onto a common factor which would have been more accurately represented by two factors.

A total of 21 items were discarded because they failed to share a loading of 0.4 on any factor. Outcomes of item reliability analysis removed two more items from the questionnaire. The item "When I feel that there are few learning and development opportunities at work, I spend my free time learning new things" shared a loading of -.403 on the sixth factor. However, item reliability analysis revealed that its inclusion reduced the internal consistency from  $\alpha = .752$  to  $\alpha = .350$ , an unacceptable level (Hinkin, 1998). It was also found that removal of the item "When I feel that there are few learning and development opportunities at work, I spend my free time considering alternate jobs I could do" increased the internal consistency of the second factor from  $\alpha = .856$  to  $\alpha = .867$ . Item analysis revealed that each item shared the strongest correlation with its own factor, rather than the other five factors. The total variance explained by the Learning and Development Survey was 55.44%, and the factor solution demonstrates a good fit to the data  $\chi(1647) = 2333.725, p < 0.01$ . Retained items along with internal consistencies (Chronbach's  $\alpha$ ) and item correlations are reported in Table 3.

### *The Factors*

The first factor was named Organisational Goal Selection/ Engagement – Learning Climate (OGSE-LC). This factor contained items from the original OGS and OGE subscales pertaining to a perception of a positive learning climate. All aspects of organisational goal selection were included: contextual developmental appropriateness ("My workplace has a mentoring system"), organizational preference for learning and development, balance between specialization and diversity ("My workplace provides training in advanced skills"), and restructuring of goals for older workers. Goal engagement components accounted for in OGSE-LC included environment optimization ("In my workplace, I can access training materials to develop my skills") and compensation ("In my workplace, I can get help when my job becomes difficult"), as well as climate optimization ("In my workplace, my supervisor is supportive of learning and development.")

The second factor was named Individual Goal Engagement (IGE), as it matched the original conceptualization of IGE. Behavioural optimization and compensation ("When I am unsure about my learning and development opportunities, I ask somebody for help") were represented, as was cognitive aspects of goal striving.

Organizational Goal Disengagement (OGD) was the third factor, which also matched the original conceptualization of organisational climate or culture factors not conducive to learning and development amongst older workers. Items consisted of organizational protective attributions, or stereotypical beliefs ("In my workplace, older workers are thought to be unwilling to learn"), social comparisons, or favoritism of younger workers and adaptation of standards, or lowering the importance of older workers' learning and development compared to other organizational goals ("In my workplace, physical strength seems to be more important than knowledge.")

Individual Goal Selection (IGS), the fourth factor, represented a narrowing of the original construct. Only items pertaining to contextual developmental appropriateness ("It is important for me to influence the future of my workplace") and personal preferences were retained. Questions related to the balance between specialization and diversity or goal restructuring after developmental loss did not load onto any factors.

The fifth factor was called Organisational Goal Engagement – Work Tasks (OGE-WT). Items on this scale related exclusively to learning and development opportunities afforded in the current work position, and autonomy ("In my job, I am able to try new ways of doing things").

The final factor was Individual Goal Disengagement (IGD). This factor was comprised of three items which covered self protective attributions only.

Table 3. *Factor Analysis and Item Reliability Analysis of the Learning and Development Survey*

Items	Factor Load $\alpha=.853$	Item Reliability Analysis (Factors)					
		OGSE LC	IGE	OGD	IGS	OGE- WT	IGD
Organisational Goal Selection/ Engagement – Learning Climate (24 items; $\alpha =.957$ ; Eigenvalue = 16.067; 25.12%)							
My workplace provides job opportunities that are appropriate for me.	.579	.649	.342	-.033	.307	.471	-.022
My workplace has a mentoring system.	.673	.661	.148	-.265	.320	.260	.214
My workplace provides learning and development opportunities that meet my needs.	.708	.765	.293	-.285	.350	.453	-.003
My workplace's rules and policies make it possible for me to take part in learning and development activities.	.682	.759	.261	-.248	.324	.480	-.013
Learning and development are important goals at my workplace.	.830	.803	.227	-.192	.246	.386	-.097
My workplace helps me to decide which skills to improve.	.743	.707	.113	-.206	.128	.258	-.003
My workplace helps me to decide on my most important learning and development goals.	.640	.675	.154	-.238	.188	.364	.182
My workplace supports study and education for older workers outside of work.	.699	.718	.143	-.288	.225	.285	-.182
In my workplace, learning and development activities are designed to develop a range of skills.	.768	.749	.232	-.255	.247	.302	-.198
My workplace provides training in advanced skills.	.762	.754	.263	-.270	.244	.281	.022
My workplace is willing to change learning and development activities to suit my needs.	.746	.740	.072	-.313	.171	.313	-.154
My workplace has special learning and development programs for workers with limited formal education.	.686	.686	.010	-.317	.225	.282	.060
If I find learning and development activity too difficult for me, my workplace can help me achieve it.	.727	.708	.048	-.283	.096	.317	.117
In my job, I have the opportunity to continuously develop my knowledge and skills.	.454	.655	.341	-.131	.429	.657	-.132
In my workplace, I can access training materials to develop my skills.	.422	.577	.227	-.167	.346	.414	-.008
In my workplace, I can get help when my job becomes difficult.	.610	.643	.264	-.454	.211	.192	-.146
In my workplace, I have the opportunity to participate in training.	.677	.724	.270	-.168	.299	.385	-.068
I have access to learning and development advice within my workplace.	.647	.707	.270	-.229	.290	.386	-.068
In my workplace, I am encouraged to find better ways of doing my job.	.631	.723	.264	-.338	.247	.441	-.082
In my workplace, I am encouraged to ask questions about my job.	.609	.700	.324	-.351	.309	.403	-.227
In my workplace, my co-workers are supportive of learning and development.	.643	.709	.329	-.231	.340	.393	-.136
In my workplace, my supervisor is supportive of learning and development.	.657	.684	.305	-.231	.273	.345	-.164
In my workplace I am given useful feedback to improve my skills.	.847	.811	.210	-.344	.162	.334	-.200
In my workplace, there are rewards for taking part in learning and development activities.	.785	.750	.180	-.234	.269	.286	-.124
Individual Goal Engagement (12 items; $\alpha =.867$ ; Eigenvalue = 6.402; 10%)							
I am willing to work hard at developing new work skills.	.542	.226	.644	-.078	.361	.351	-.237
I try to obtain challenging jobs in order to develop my skills.	.566	.212	.680	-.030	.322	.306	-.125
If training and development opportunities are available within my workplace, I will participate in them.	.529	.147	.635	-.055	.328	.241	-.165
I design better ways of doing my job when it becomes challenging.	.633	.150	.766	-.057	.375	.429	-.228
When aspects of my job become challenging, I try to find solutions by myself before I ask for help.	.546	.105	.609	-.040	.188	.274	-.039
When I am unsure about my learning and development opportunities, I ask somebody for help.	.544	.317	.525	-.074	.107	.189	.047
When I have a learning and development goal, I think about how I will benefit when I succeed in that goal.	.595	.076	.659	.058	.182	.364	-.149
I have the ability to achieve my learning and development goals.	.584	.109	.687	-.030	.248	.287	-.191
When I have a learning and development goal, I think about how good I will feel when I achieve it.	.641	.176	.688	-.174	.256	.271	-.191
I stay focused on my learning and development goals.	.544	.306	.690	-.085	.214	.237	-.095
When I have set a learning and development goal for myself, I am confident that I will achieve it.	.521	.249	.657	-.045	.174	.233	-.204
When I have decided on a learning and development goal, I avoid distractions.	.400	.247	.486	.117	-.023	.117	.100
Organizational Goal Disengagement (10 items; $\alpha =.833$ ; Eigenvalue =4.743; 7.41%)							
In my workplace, older workers are encouraged to retire.	.621	-.184	-.047	.651	.006	-.079	.007

Older workers are not offered training and development in my workplace.	.653	-.334	-.208	.701	-.123	-.217	.165
In my workplace, knowledge of the latest technologies is valued over direct industry experience.	.605	-.035	.008	.597	.124	.069	.138
In my workplace, younger workers are considered to be more competent than older workers.	.713	-.203	-.047	.725	-.061	-.197	.182
In my workplace, older workers are thought to dislike change.	.531	-.210	.213	.647	.107	.042	.162
In my workplace, I have been given fewer learning and development opportunities as I get older.	.701	-.337	-.115	.783	-.086	-.116	.234
In my workplace, younger workers are given more learning and development opportunities than older workers.	.695	-.375	-.128	.792	-.064	-.104	.281
In my workplace, younger workers are considered to be more successful in learning and development activities than older workers.	.758	-.289	-.061	.822	-.010	-.032	.312
In my workplace, physical strength seems to be more important than knowledge.	.501	-.227	-.099	.569	-.067	-.179	.247
In my workplace, older workers are thought to be unwilling to learn.	.593	-.287	.038	.691	.066	.008	.150
Individual Goal Selection (7 items; $\alpha = .852$ ; Eigenvalue = 3.213; 5.02%)							
It is important for me to teach work skills to younger workers.	.462	.133	.101	.022	.635	.240	-.056
It is important for me to influence the future of my workplace.	.570	.392	.166	.085	.754	.403	-.061
It is the right time for me to improve my work skills.	.782	.232	.253	.072	.756	.290	-.130
Training available to me matches my learning and development needs.	.528	.565	.283	-.147	.684	.342	-.022
I decide what learning and development goals are important to me.	.757	.273	.224	-.041	.806	.334	-.106
I know exactly what skills I want to improve.	.610	.031	.384	-.030	.706	.156	-.121
I am interested in developing my work skills.	.674	.105	.394	-.006	.744	.246	-.203
Organisational Goal Engagement – Work Tasks (6 items, $\alpha = .855$ ; Eigenvalue = 2.666; 4.17%)							
Learning new knowledge and skills is important for my job.	.564	.403	.348	.014	.235	.723	-.024
In my job, I have to make difficult decisions.	.798	.218	.367	-.106	.248	.795	-.184
In my job, I have to make quick decisions.	.763	.152	.238	-.073	.148	.733	-.043
In my job, I am able to try new ways of doing things	.587	.573	.333	-.082	.400	.833	-.107
I have the opportunity to influence the running of my workplace.	.477	.516	.393	-.167	.385	.726	-.197
My work is challenging for me.	.675	.306	.135	-.035	.272	.642	-.245
Individual Goal Disengagement (3 items, $\alpha = .752$ ; Eigenvalue = 2.389; 3.73%)							
Learning and development goals are not important to me.	.598	-.022	-.166	.201	-.038	-.098	.841
When my learning and development goals do not work, it's because I am unlucky.	.742	-.273	-.098	.243	-.110	-.288	.796
I do not need to participate in learning and development because I am competent in my job.	.635	.028	-.193	.233	-.178	-.016	.818

### Criterion Validity

Means and standard deviations for factor scores are reported in Table 4, along with factor intercorrelations. Low scores indicate stronger agreement with the construct, whilst high scores indicate stronger disagreement.

Table 4. Means and Standard Deviations of each Factor, and Intercorrelations

	Mean	SD	OGSE-LC	IGE	OGD	IGS	OGE-WT	IGD
OGSE-LC	63.56	15.07	1					
IGE	28.53	5.49	.275**	1				
OGD	33.82	5.95	-.362**	-.023	1			
IGS	13.34	4.01	.355**	.324**	-.016	1		
OGE-WT	12.48	3.39	.498**	.377**	-.115	.401**	1	
IGD	11.60	1.95	-.084	-.155	.274**	-.131	-.156	1

\*\*  $p < 0.01$

Parametric tests including the *t*-test and ANOVA, and non parametric tests including the Mann-Whitney *U* and Kruskal- Wallis Test were used to evaluate the impact of demographic factors, other activities and future plans on factor scores of the Learning and Development Survey. Non parametric tests were used when group ratios within a variable were larger than 1:4. In each case, the independent variables consisted of the demographic variables reported in Tables 1 and 2. The dependent variables were OGSE-LC, IGE, OGD, IGS, OGE-WT and IGD.

Supervisors were found to report higher agreement with IGS ( $t(1,103) = -3.073, p = .003$ ), OGSE-LC ( $t(1,103) = -2.346, p = .021$ ) and OGE-WT ( $t(1,103) = -3.616, p = .000$ ) items. Females ( $t(1, 74) = 2.279, p = .026$ ) and respondents under the age of 45 years ( $t(1, 110) = -3.426, p = .001$ ) indicated a higher agreement with IGE, whilst workers with secondary schooling only ( $t(1,110) = -4.040, p = .000$ ) indicated higher agreement with IGD items.

Volunteer work ( $t(1,110) = -2.038, p = .047$ ) and training and education courses ( $Z(1,108) = -2.354, p = .019$ ) were associated with high agreement with IGE items, with the latter sharing the same relationship with IGS ( $Z(1,108) = -1.841, p = .013$ ). Caring for children ( $t(1,101) = -2.301, p = .023$ ) or elderly/ disabled relatives ( $t(1,101) = -2.756, p = .007$ ) was associated with agreement with OGE-WT items. Participation in sports ( $Z(1,109) = -2.094, p = .036$ ) or political/ trade union activities ( $t(1,103) = -2.101, p = .038$ ) was related to higher agreement with OGD items.

Intention to obtain an educational qualification was linked to higher agreement on the IGE ( $Z(1,102) = -3.823, p = .000$ ), IGS ( $Z(1,102) = -2.202, p = .028$ ) and OGE-WT ( $Z(1,102) = -2.657, p = .008$ ) items, and disagreement with IGD ( $Z(1,102) = -2.153, p = .031$ ) items. Goals relating to higher level jobs ( $t_{IGE}(1,105) = -3.915, p = .000$ ;  $t_{OGE-WT}(1,108) = -2.488, p = .014$ ), changing jobs within the same industry ( $t_{IGE}(1,102) = -2.332, p = .022$ ) or increasing work hours ( $t_{IGS}(1,110) = -2.548, p = .011$ ;  $t_{IGD}(1,110) = -2.102, p = .036$ ) were associated with higher agreement with the IGE, IGS and OGE-WT factors, and greater disagreement with IGD items, where significant differences were detected. Intention to participate in sports or leisure activities was related to increased agreement with IGE items ( $Z(1,113) = -2.221, p = .026$ ). Intention to retire was associated with disagreement with IGE ( $Z(1,112) = -2.144, p = .032$ ) and OGE-WT ( $Z(1,112) = -2.837, p = .005$ ) items.

Where significant differences in independent variables with more than three groups were detected, follow up tests were conducted. For occupation ( $F(3,102) = 4.652, p = .012$ ), professionals or managers reported lower OGE-WT scores than blue collar workers. As for department size ( $\chi_{IGE}^2(3,111) = 9.621, p = .022$ ;  $\chi_{IGS}^2(3,111) = 14.260, p = .003$ ), employees in departments of more than 100 workers reported lower scores on the IGE factor than employees in smaller departments of 10-99 employees. Similarly, lower scores on the IGS factor were linked to departments with an excess of 100 workers, compared to departments of 5-9 workers. Lower IGS scores ( $\chi_{65+}^2(2,107) = 7.120, p = .028$ ) were also reported by participants who indicated a willingness and ability to remain in their current jobs post retirement, compared to those who reported that they would be unable to remain in their jobs after retirement. Work complexity ( $\chi^2(3,111) = 22.880, p = .000$ ) follow up tests revealed that complex or very complex work was associated with lower scores on OGE-WT than work that was neither simple nor complex.

## Discussion

This paper reported on the construction of the Learning and Development Survey. A six factor solution was obtained that was similar to the hypothesized factor structure, with two differences. Firstly, items pertaining to organizational goal selection and organisational goal engagement: environmental compensation and learning climate loaded onto one factor, whilst current job related items pertaining to organizational goal engagement loaded onto another factor. Secondly, the individual goal selection factor was limited to items related to contextual developmental appropriateness and personal preferences. A third issue was the small number of items retained for the individual goal disengagement factor.

Support for criterion validity was also found. Participation in education and training courses was associated with higher agreement with IGS and IGE items. Aspiration to obtain an educational qualification was related to four factors: IGS, IGE, OGE-WT and IGD. Furthermore, the combination of intention to obtain a higher level job rather than retire was also associated with IGE and OGE-WT. In other words, an orientation towards learning and development type goals was found to be linked to an endorsement of developmentally appropriate learning goals, and striving towards them, rather than avoidance of such goals via disengagement strategies. Secondly, learning and development opportunities related to the current job (OGE-WT) appears to support these goals.

Findings suggest a need for further investigation of older workers' perceptions of learning and development goals related to specialization versus diversity and restructuring of goals in response to developmental loss or lack of opportunity in the work environment. As no items pertaining to these aspects of individual goal selection were retained, this may suggest that selection processes in older workers were not accurately captured by the questionnaire, or that respondents were unsure of how to respond to these items as they do not consider these processes in relation to their careers. The second option was more likely, given that the majority of the sample was aged 55 years or younger, and fewer than 10% reported a medical condition or disability, which indicated that functional impairment was yet to impact on their work options. Secondly, only a third of the items were retained on the IGD scale. While the psychometric properties of the scale were acceptable, it is possible that individual disengagement from learning and development goals in an organizational setting differs from the generalized concept of goal disengagement described by Poulin et al (2005). For instance, positive emotions in response to lack of opportunity to learn and development might be more difficult to sustain in a discriminatory work environment. Nonetheless, the outcomes of factor analysis supported the reliability of the Learning and Development Survey, and provide support for the use of an Integrated SOC model to study learning and development goals in older workers.



Further studies could investigate these constructs in larger and more demographically diverse samples and well as focus on aspects of individual goal selection and goal disengagement.

## References

- Baltes, B. B., & Dickson, M. W. (2001). Using life-span models in industrial-organizational psychology: the theory of selective optimization with compensation. *Applied Developmental Science, 5*(1), 51-62.
- Baltes, P. B. & Freund, A. M. (2003). The intermarriage of wisdom and selective optimization with compensation (SOC): Two meta-heuristics guiding the conduct of life. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 249-273). Washington, DC: American Psychological Association.
- Barab, S., & Plucker, J. (2002). Smart people or smart contexts? Cognition, ability, and talent development in an age of situated approaches to knowing and learning. *Educational Psychologists, 37*(3), 165-182.
- Bowling, A. (2007). Aspirations for older age in the 21<sup>st</sup> century: What is successful aging? *International Journal of Aging and Human Development, 64*(3), 263-297.
- Brandtstadter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: a two process framework. *Developmental Review, 22*, 117-150.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: a theory of socioemotional selectivity. *American Psychologist, 54*(3), 165-181.
- Fabrigar, L. R., MacCallum, R. C., Wegener, D. T., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272-299.
- Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization, and compensation: measurement by self-report and construct validity. *Journal of Personality and Social Psychology, 82*(4), 642-662.
- Heckhausen, J., & Schultz, R. (1999b). The primacy of primary control is a human universal: A reply to Gould's (1999) critique of the life-span theory of control. *Psychological Review, 106*(3), 605-609.
- Heckhausen, J., & Schultz, R. (1999). Selectivity in life-span development: biological and societal canalizations and individuals' developmental goals. In J. Brandtstädter & R. M. Lerner (Eds.), *Action and Self-Development: Theory and Research Through the Life Span* (pp. 67-103). California: Thousand Oaks.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*(1), 104-121.
- Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review, 29*(3), 440-458.
- Kendig, H. (2004). The social sciences and successful aging: Issues for Asia-Oceania. *Geriatrics and Gerontology International, 4*, S6-S11.
- Lim, V. K. G., & Feldman, D. (2003). The impact of time structure and time usage on willingness to retire and accept bridge employment. *International Journal of Human Resource Management, 14*(7), 1178-1191.
- McIntosh, M. & Poikolainen, A. (2007). *Aging in Asia and Oceania: AARP Multinational survey of opinion leaders*. American Association for Retired Persons: Washington, DC.
- Park, H. J. & Gardner, T. M. (2004). HR practices or HR capabilities: which matters? Insights from the Asia Pacific region. *Asia Pacific Journal of Human Resources, 42*(3), 260-273.
- Patrickson, M. Asia's ageing workforce: the emerging challenge for the twentieth century. *International Journal of Organisational Behaviour, 3*(1), 53-63.
- Poulin, M., Haase, C. M., & Heckhausen, J. (2005). Engagement and disengagement across the life span: an analysis of two-process models of developmental regulation. In W. Greve, K. Rothermund & D. Wentura (Eds.), *The adaptive self: personal continuity and intentional self-development*. Ohio: Hogrefe and Huber Publishers.
- Staudinger, U. M., Marsiske, M., & Baltes, P. B. (1993). Resilience and levels of reserve capacity in later adulthood: perspectives from life-span theory. *Development and Psychopathology, 5*, 541-566.
- Tabachnick, B. G., & Fidell, L. S. (2006). *Using multivariate statistics* (5 ed.). Boston, MA: Allyn & Unwin.