

AGE-GENDER INTERACTION ON THE ENDEAVOR OF CAREER DEVELOPMENT

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ABSTRACT

This study investigates the impact of age-gender interaction on the process of attaining human capital for the purpose of career development. The significance and magnitude of age-gender interaction on the completion time a measure for success is observed. After controlling for education levels gender is instrumental in affecting the process of career development initiatives for higher age groups. Data collected for this study consists of observations of Chartered Property and Casualty Underwriter designees who completed the certification program. Results indicate that the predictive power of gender on the process of career development initiatives to be contingent upon the age category. It is also imperative to observe that younger individuals completed the program much sooner than the others and there is no statistical difference in performance due to gender in those age groups. These findings are consistent with the assumption that an efficient career development process should be very much interrelated with the age-gender interaction. The results of this study indicate that the gender influence on the career progression is very much dependent on the life phase.

INTRODUCTION

While there is considerable research done in the organizational literatures that focuses on factors affecting career development and career success (Ng, Eby, Sorensen, & Feldman, 2005), very little is known in regards to the effect of gender and age interaction in the career development initiatives. Therefore, the primary objective of this research is to examine the effect of gender in conjunction with age on the career development initiatives in attaining human capital within the insurance industry. Gender based earnings differential has been a common social predicament in many developing and industrialized countries (Blau & Kahn, 1994; Brainerd, 2000; Katz & Autor, 1999). This is more so in transitional economies; such as, China (Shen & Deng, 2008), Russia and Ukraine (Brainerd, 2000). Researchers have found that earnings inequalities primarily result from the differences in males and females human capital accumulation (Auster, 1989; Larwood, Gutek, & Gattiker, 1984). This paper attempts to explore the gender effect in conjunction with individual's age and its relations to decisions in regard to their social and family aspects. Thus, age-gender interaction is used to frame the argument why gender difference exists (if any) in the career development process.

In general, competing time demands for females for family care compared to males could possibly account for the gender difference in the career development process. If this assumption is true, then a difference in performance for females is expected depending on their life phase. One of these life phases could be females who

are in prime child caring years. Therefore, in this stage of life they would be expected to take longer time to complete their career enhancement process than females who are younger. In some recent reports (BLS 2006), among adults living in households with children under 18, females spent 115 minutes each weekday performing childcare activities; by contrast, males spent 49 minutes. On weekends, females spent 78 minutes each day on childcare while males provided about 52 minutes. This amounts to annual difference of nearly 80 hours a year, the approximate amount of time to study for one CPCU professional examination. Furthermore, the differences are even greater when considering secondary childcare activities, such as housekeeping and purchasing goods & services for children. In a study of 234 married working couples Milkie, Bianchi, Mattingly, and Robinson (2002) found that women dedicated more time than men in child caring. Similar findings are also reported by Cinamon, Weisel, and Tzuk (2007). As a result of these competing time demands, interference can occur between the work and family and give rise to work–family conflict (Carr, Boyar, & Gregory, 2008).

Human capital explanation of gender difference focuses on the voluntary choices made by individuals in allocating investments, such as time and effort, between work and family. According to human capital models females are more likely to receive fewer promotions (career success) because they possess less human capital. The reason for males to have more education and job training is due to fewer career interruptions in comparison to females, and thereby accumulate more human capital. Therefore, females are falling behind males in terms of accumulated knowledge and skill (Ilgen & Youtz, 1986; Morrison & Von Glinow, 1990). The primary reason may be females are more likely to quit their jobs and leave the labor market (at least temporarily) to bear and raise children, and thus interrupt their career development process (Schwartz, 1989; Viscusi, 1980). Thus, human capital model explains the career progression of individuals by the accumulation of skill level that they accumulate during the course of their career (Becker, 1962, 1975; Neal, 1995). On the other hand, career development model looks at career paths in which individuals maximize their career success by choosing a particular sequence (such as, types of firms, types of occupations, types of training, etc.) that form their career objective (Sicherman & Galor, 1990; Sturman, Walsh, & Cheramie, 2008). Therefore, the theory of career development primarily focuses on the specialized education and training as the major sources of human capital. In addition, more efficient (faster) attainment of human capital can generate additional accumulation (Carrera, Carmona, & Gutiérrez, 2008) and provide extra edge to the career success.

Several studies have found that formal schooling alone cannot explain the earnings differential observed between individuals with similar backgrounds and knowledge (Bartel & Sicherman, 1999). This establishes the fact that, even after accounting for formal education there are other observed/unobserved factors (Buddeberg-Fischer, Stamm, Buddeberg, & Klaghofer, 2008; Dik, Sargent, & Steger, 2008) exist why some groups of individuals differ in their initiatives of career development. This study, examines the effect of age-gender interaction on the process of career development initiatives. Specifically, effect due to age-gender interaction on the implementation process of human capital attainment for the career development purpose is observed. This research primarily differs from other studies in that, gender effect on the process of human capital attainment is conditional on age and thereby defining a life phase.

BACKGROUND OF THIS STUDY

The Chartered Property and Casualty Underwriter (CPCU) professional examination and designation is the most recognized certification system in the area of property and casualty insurance. American Institute for Chartered Property and Casualty Underwriters (AICPCU) confers the CPCU designation. The CPCU designation is earned through the successful completion of eight college-level courses, an experience requirement, and an agreement to be bound by ethical standards. Curriculum includes risk management, insurance products, insurance operations, financial analysis, and legal & regulatory environment of insurance (see, Choudhury, Jones, Gamage, & Ostaszewski, 2008). An eight course program is equivalent to completing about 24 hours of college credits. Each course is accredited by the American Council on Education (ACE). This certification helps practitioners to make sound decisions in the complex environment of property and casualty insurance area.

CPCU certification program is primarily directed toward professionals within the property/casualty insurance industry. The property/casualty industry in the United States operates in a much regulated environment, and within the evolving American consumer and credit markets, and a very diverse labor force. Thus factors such as, educational trend, demographic, litigation, and consumerism influence the insurance industry on a continuous basis. As a result, the need for educated professionals, and ultimately the desire and ability of insurance industry individuals to seek and attain the CPCU designation to keep up with the dynamic change in this complex environment requires further investment in human capital for their career development. This study explores, if the gender effect is age dependent when attaining human capital (the CPCU designation) for the purpose of career development. This paper thus, examines the effect of age-gender interaction on the length of completion time of CPCU certification a source of human capital.

Sample consists of observations of CPCU designees who completed the certification program during the period of 1999 through 2006. This study then analyzes the effect of age-gender interaction on the process of attaining human capital. In particular, the significance and magnitude of age-gender influence on the CPCU completion time a career development process is studied in this research. To isolate and extract the age-gender interaction effect, education levels are controlled through indicator variables in the analysis. After controlling for education levels, analysis reveal that age-gender interaction is instrumental in impacting the process of career development. Analysis also suggests that gender is more effective when acquiring human capital for older individuals than younger individuals. Thus, results of this study provide solid support of age dependent gender effect. Therefore, this research contributes to the literature by documenting the constructive externalities of age-gender interaction, and associating systematic age based gender effect with the length of completion time for career development process.

TABLE 1: Summary Statistics of Length of Completion Time by Age Groups

AGE GROUP		Median	Mean	Std	N
		COMPL_TIME	COMPL_TIME	COMPL_TIME	COMPL_TIME
	GENDER				
20-25 YRS	F	36.69	41.27	17.77	215
	M	33.73	38.31	18.70	281
	All	34.92	39.59	18.35	496
25-30 YRS	GENDER				
	F	41.75	48.23	22.97	261
	M	36.46	42.55	22.09	360
	All	39.19	44.94	22.62	621
30-35 YRS	GENDER				
	F	40.24	46.21	21.21	154
	M	36.23	39.43	19.61	263
	All	37.71	41.94	20.46	417
35-40 YRS	GENDER				
	F	39.22	44.26	20.48	107
	M	33.57	39.07	21.64	167
	All	35.80	41.10	21.31	274
40-45 YRS	GENDER				
	F	40.41	46.65	22.59	77
	M	34.39	37.45	20.23	91
	All	36.76	41.67	21.77	168
45-50 YRS	GENDER				
	F	41.11	47.71	21.22	48
	M	37.12	37.46	15.73	60
	All	39.06	42.01	18.98	108
50-55 YRS	GENDER				
	F	41.19	47.01	20.79	18
	M	31.73	33.86	18.51	21
	All	37.61	39.93	20.44	39
All		37.17	37.32	42.10	20.87

Note: Completion time is number of months.

METHODOLOGY

Research methodology of this study included data collection, variable identification, statistical model selection, and hypothesis development. These procedures and their discussions are set out below.

Sample and Data

Data for this study is an eight year period of CPCU designees' complete record of data (i.e., candidates who completed the certification program). The CPCU program is equivalent to completing about 24 hours of college course credits and also has options between personal lines or commercial lines insurance. This has provided prospective candidates an incentive to enroll into the program of their likings.

Table-1 presents summary statistics of completion time by different age groups and gender. A multiple regression analysis was applied to assess the significance of age-gender interaction effect on completion time. In addition to the primary independent variable, age-gender interaction; the analysis also included first order terms: age and gender. Gender is a binary variable and is coded 1 for male and 0 for female. A number of prior studies have investigated the impact of gender as a predictor on academic performance. Two earlier studies found that female students performed better than males in accounting area (Mutchler, Turner, & Williams, 1987; Lipe, 1989), while others found males outperforming females in finance (Borde, Byrd, & Modani, 1996) and Economics (Dale & Crawford, 2000; Heath, 1989). Several studies in computer arena found that, compared to male, females tend to display lower computer aptitude (Rozell & Gardner, 1999; Smith & Necessary, 1996) and higher level of apprehension (Igbaia & Chakrabarti, 1990).

Hypothesis

The present study focuses on age dependent gender effect on the length of completion time when working towards career development. This, construe that there are other unobservable factors in play when gender is influencing career development endeavors. Therefore, this research explores the effect of age-gender interaction on the length of completion time (total time for completing the CPCU program) while carrying out the process of human capital attainment for career development.

Variables and Statistical Techniques

To test the hypothesis on the relationship between completion time and age-gender interaction, two separate analyses are performed. First, correlation analysis is done (results not reported) to examine the direction of the association between factors. Second, completion time (number of months) is regressed on the age, gender, age-gender interaction, and education levels. Completion time is calculated as number of months taken to complete the certification program. Therefore, the difference between the first examination date and the date of completion of the program is termed as completion time. Age is introduced into the model as an independent variable in its original format.

In general, it is assumed that there is a difference between younger and older people in their learning process. These differences may relate to candidates' job position, the larger amount of life experience that they bring with them, and other personal life aspects may also play a role on the length of completing the program.

Numerous studies have found GPA to be significantly correlated with student performance (Doran, Bouillon, & Smith, 1991; Borde, 1998; Dale & Crawford, 2000). However, because the level of education (highest degree earned) differs greatly among candidates in this study and their performance on completing the program may be influenced by the level of educational background; education levels are therefore include as indicator variables instead of GPA to control for background knowledge. Thus, education level categorical variable is introduced as several indicator variables ranging from associate to doctorate degrees. These are included in the model to control for the level of background knowledge to isolate and test individuals' performance on completion time for career development process.

Thus, a multiple regression model was run using SAS software (see, SAS/STAT User's Guide, 1993) on several different independent variables; age, gender, age-gender interaction, and education levels. Age-gender interaction is to measure the effect of gender on completion time due to age differences. This measure is designed to test the hypothesis of age depended gender effect in view of individuals' performance in attaining human capital for career development process. The specification of the regression model takes the following form:

$$\begin{aligned} \text{Completion_Time} = & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Gender} + \beta_3 \text{Age \& Gender} + \\ & \beta_{41} \text{Associate} + \beta_{42} \text{Bachelor} + \beta_{43} \text{Masters} + \beta_{44} \text{Law} + \beta_{45} \text{Doctorate} \dots \dots \dots \end{aligned} \quad (1)$$

Where:

Completion_Time: Length of time needed to complete the program.

Age : Age of an individual,

Gender: Male=1, Female=0.

Age&Gender: Interaction between age and gender.

Education (indicator variables): HS, Associate, Bachelor, Masters, Law, Doctorate.

Multiple regression model is often appropriate for continuous and/or categorical predictor variable (*X*) with a continuous response (*Y*). Method of least squares or a method of maximum likelihood for normal population is primarily used. Further discussions on different estimation methods can be found in Choudhury, Hubata and St. Louis (1999), and Choudhury (1994).

EMPIRICAL RESULTS

Descriptive statistics for the various measures of dependent and independent variables are presented in Table 1. Relatively longer average completion time for females over 30-35 years age groups suggest that due to some unobservable factor(s) females take more time than when they are younger.

TABLE 2: Percentage Distribution by Age Group, Gender, and Education level

AGE GROUP		EDUCATION LEVEL						All
		1	2	3	4	5	6	
20-25 YRS	GENDER							
	F	0.77	0.69	6.49	0.32	.	.	8.27
	M	0.37	0.15	6.40	0.32	0.01	0.01	7.26
	All	1.14	0.85	12.89	0.64	0.01	0.01	15.53
25-30 YRS	GENDER							
	F	1.75	1.31	9.95	1.32	0.15	.	14.48
	M	0.43	0.45	10.18	1.38	0.18	0.02	12.64
	All	2.18	1.76	20.13	2.71	0.33	0.02	27.13
30-35 YRS	GENDER							
	F	2.38	1.52	6.12	0.87	0.39	0.02	11.31
	M	0.59	0.45	7.60	1.58	0.46	0.06	10.74
	All	2.97	1.98	13.72	2.44	0.86	0.08	22.04
35-40 YRS	GENDER							
	F	2.62	1.69	3.40	0.53	0.15	.	8.39
	M	0.41	0.41	4.34	1.10	0.43	0.05	6.75
	All	3.03	2.10	7.74	1.63	0.57	0.05	15.14
40-45 YRS	GENDER							
	F	2.23	1.41	2.08	0.42	0.11	0.01	6.26
	M	0.26	0.39	2.23	0.75	0.17	0.05	3.85
	All	2.50	1.81	4.31	1.17	0.28	0.05	10.12
45-50 YRS	GENDER							
	F	1.45	0.90	1.36	0.25	0.11	.	4.06
	M	0.28	0.22	1.48	0.44	0.14	0.03	2.59
	All	1.72	1.12	2.83	0.69	0.25	0.03	6.65
50-55 YRS	GENDER							
	F	0.77	0.44	0.62	0.19	0.04	.	2.05
	M	0.17	0.11	0.68	0.29	0.06	0.03	1.34
	All	0.94	0.55	1.30	0.48	0.10	0.03	3.40
All		14.50	10.16	62.92	9.76	2.40	0.26	100.00

Table 2 results do not provide any evidence of uneven proportion of gender distribution. Therefore, percentage distribution of gender is more or less similar across different age groups and education levels. Gender differences are not quite visible for lower age groups (Table 1). Indicating that uneven percentage distribution of gender is not a contributing factor for gender differences. Another interesting observation is that the distribution of “length of completion time” is significantly positively skewed for each age group on or above 30 years, while the degree of variations stays similar (Table 1). However, the skewness is larger for females than males, suggesting that an added proportion of female in each age group takes longer time to complete the program in their career development endeavors, specifically for the age groups higher than 30-35 years. This suggests that the effect of gender on human capital accumulation process for career development purpose also depends on which age group they belong.

Simple pair-wise correlation analysis (results not reported) among the variables, reveal that gender and completion time were negatively correlated at the 0.05 significance level (note that, even though simple-correlation is statistically meaningless for gender -- an indicator variable, this correlation is only an indication of the relationship direction in a simple linear regression setting). It is possible that gender-bound differences exert influence the way in which male and female are inclined to learn (Gallos, 1995; Gilligan, 1982; Richardson, 2000).

Results of multiple regression analysis are reported in Table 3. The proposed model appeared to fit well in estimating the human capital attainment as measured by completion time. Reported coefficients of determination (R^2) is 0.05, while F value is 14.22, at a significance level <0.0001 . This comparatively low value of R^2 is expected primarily due to the use of indicator explanatory factors. Results indicate that younger individuals complete the program faster than others (see Table-1 & Table-3). This establishes the hypothesis that the completion time outcome is age dependent. Analysis also reveals that in general, higher educational background does contribute much to the curbing of completion time.

Finally, age-gender interaction is found to be a significant (at 5%) factor of individuals' performance as measured by completion time when attaining human capital for career development process. Therefore, the gender effect on the performance of human capital attainment is dependent on individual's age. Specifically, gender effect is significant for the higher age groups. This result provides support for the hypothesis that the process of human capital attainment as measured by CPCU completion time is dependent on age-gender interaction. Therefore, individuals' gender may affect the length of completion time depending on their age groups. Specifically, females require longer time (on average about 6 to 7 months more, see Table 1) when they are in the age groups over 30 years. On the contrary, this gender effect is quite smaller in magnitude for younger individuals.

TABLE 3: Regression Results on the Length of Completion Time

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	47136	5891.98608	14.22	<.0001
Error	2128	881821	414.38956		
Corrected Total	2136	928957			
R-Square	0.0507		Adj R-Sq	0.0472	

Parameter Estimates					
Variable	DF	Parameter Estimates	Standard Error	t Value	Pr > t
Intercept	1	33.75431	3.17248	10.64	<.0001
Age	1	0.14878	0.08792	1.69	0.09
Gender	1	1.65154	3.74890	0.44	0.65
Age*Gender	1	-0.22572	0.11614	-1.94	0.05
Associate	1	11.35146	2.51005	4.52	<.0001
Bachelor	1	9.10174	1.34629	6.76	<.0001
Masters	1	2.85214	1.64978	1.73	0.08
Law	1	5.41382	2.53006	2.14	0.03
Doctorate	1	-1.43491	6.91749	-0.21	0.83

Level of Education (indicator variables): Associate=1, else=0; Bachelor=1, else=0; Masters=1, else=0; Law=1, else=0; Doctorate=1, else=0.

A number of possible explanations can be explored for this age dependent gender effect. However, considering that the average age of a CPCU enrollee is about 31 years, competing time for family care could be a major aspect and gender differences in time spent on family care is well-documented as discussed above. This study suggests that gender effect is age dependent and more specifically the gender effect is significant for individuals in the age categories of 30 years and above. Females in their early thirties are more likely to devote time to child care and the amount of time they are devoting to children is increasing over the years. In 1965 females devoted 15.4 hours per week to childcare. This has increased to 19.6 hours per week in 1998. During this same time period males also increased their childcare time from 4.9 hours to 9.1 hours per week (Bianchi, 2000). So arguably the increase in time spent on child care by females does

not, by itself explain the difference. However, during this time period females' participation in the workforce also increased dramatically. Average weekly hours worked by females (outside the home), between the ages of 25 to 34 years, increased from 15.13 hours in 1970 to 26.76 hours in 2000 (a 77 percent increase). During this same time period the average hours worked by males, in this age group, actually decreased by 8 percent (McGrattan & Rogerson, 2004). Thus the combination of an increase in intensity of parenting along with an increasing number of hours worked outside the home has reduced the number of discretionary hours available for females who had to devote to career development activities, such as attaining professional designations like CPCU.

LIMITATIONS OF THIS STUDY

Some of the limitations of this study are discussed below. This research collected and analyzed data that are from insurance industry only. Therefore, generalization of these results may not be possible to other industries. This is because the nature of work environment and expectation of time demand in work place are not necessarily similar in different industries.

There may be other socio-demographic factors that may directly or indirectly influence the regression relationship and may not have been identified and incorporated into the model. As an example, this study did not capture the data on the amount of time spent on child care activities between male and female. As mentioned earlier, there is evidence from other research studies that women spend more time on child care activities. If this difference holds true with the individuals in this study then there is a possibility that child care issues may have an influence over the women's ability to complete the program as quickly as their male counterparts. This seems quite plausible given the average age in which individuals begin their CPCU program. Analysis of this study did not incorporate the data on this issue.

IMPLICATIONS

Findings from this study have important implications on the process of career development initiatives. Despite the differences among individuals education level, their performance on the attainment of human capital has impacted by the age-gender interaction. Therefore, the relationship of gender-age difference in individual's performance appears significant in this study. These findings are consistent with the hypothesis that an efficient career development process is very much interrelated with the age-gender interaction. Therefore, the results of this study indicate that the gender influence on the career progression is dependent on individual's age.

The implications of the findings in this study are significant for managers responsible for assessing career success and building career development programs. By focusing on success outcomes due to age-gender interaction, productivity effectiveness can also be evaluated. This is extremely important because the understanding of assessment effectiveness will affect future interactions, expectations, and general attitudes. The more managerial understanding to the process of career enhancement the

more effective and trusting relationships will develop and the less likelihood of a destructive outcomes to the organization. Thus, this study provides some additional insight into the career development process from managerial perspective with respect to important age-gender interaction. Age-gender interface examined in this study were clearly influential in determining the effectiveness of career development endeavor. With that understanding in mind, they therefore could recognize that not all individuals will react in a similar fashion. Therefore, it is imperative that managers include age-gender interaction criteria into the performance efficiency measure in-view of long-term perspective of the organization. Efforts to incorporate age-gender interface and create policies and procedures supporting work/family balance may be beneficial to managerial decision making process.

CONCLUSIONS

This study, examines the effect of age-gender interaction on the process of attaining human capital by the CPCU designees. In particular, statistical significance and magnitude of age-gender influence on the “completion time” a measure for success in the career development process is observed. Education levels are controlled to isolate and extract the age-gender interaction effect. As expected, after controlling for background education, age-gender interaction is found to be instrumental in effecting the process of career development initiatives. This suggests that gender influence on the process of career development is age dependent. Furthermore, gender effect is substantially higher for older individuals compared to younger people. This predictive power of age dependent gender on the performance does not depend on whether and how much level of education is attained by an individual. Rather, it depends on which social and personal lives environment these individuals exist.

REFERENCES

- Auster, E. (1989). Task characteristics as a bridge between macro and micro research on salary inequality between men and women. *Academy of Management Review*, 14(2), 173-193.
- Bartel, A.P. & Sicherman, N. (1999). Technological Change and Wages: An Interindustry Analysis. *Journal of Political Economy*, 107(2), 285-325.
- Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *The Journal of Political Economy*, 70(5), 9-49.
- Becker, G.S. (1975). *Human capital*, 2nd edn. Chicago, IL: University of Chicago Press.
- Bianchi, S.M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography*, 37(4), 401-414.
- Blau, F.D., & Ferber, M.A. (1987). Occupations and earnings of women workers. In K.S.Koziara, M.H. Moskow, and L.D. Tanner (eds.). *Working Women: Past,*

- Present, Future*. Washington, DC, BNA Books, 37-68.
- Blau, F.D. & Kahn, L.M. (1994). Rising wage inequality and the U.S. gender gap. *American Economic Review*, 84 (1), 23–28.
- Borde, S.F. (1998). Predictors of student academic performance in the introductory marketing course. *Journal of Education for Business*, 73(5), 302-306.
- Borde, S.F., Byrd, A.K., & Modani, N.K. (1996). Determinants of student performance in introductory corporate finance courses. Conference proceedings of the Southern Finance Association Annual Meeting, Florida.
- Brainerd, E. (2000). Women in Transition: Changes in gender wage differentials in eastern Europe and former Soviet Union. *Industrial and Labour Relations Review*, 54 (1), 138–162.
- Buddeberg-Fischer, B., Stamm, M., Buddeberg, C., & Klaghofer, R. (2008). Career-Success scale – A new instrument to assess young physicians' academic career steps. *BMC Health Services Research*, 8, 120-.
- Bureau of Labor Statistics (BLS) of the U.S. Department of Labor. (2006). American time use survey-2006 results, USDL 07-0930, 21-22. <http://www.bls.gov/tus/>
- Carr, J. C., Boyar, S. L., & Gregory, B. T. (2008). The moderating effect of work–family centrality on work–family conflict, organizational attitudes, and turnover behavior. *Journal of Management*, 34(2), 244-262.
- Carrera, N., Carmona, S., & Gutiérrez, I. (2008). Human capital, age and job stability: evidence from Spanish certified auditors (1976–1988). *Accounting and Business Research*, 38(4), 295-312.
- Cinamon, R.G., Weisel, A., & Tzuk, K. (2007). Work–family conflict within the family: crossover effects, perceived parent–child interaction quality, parental self-efficacy, and life role attributions. *Journal of Career Development*, 34 (1), 79-100.
- Choudhury, A. (1994). Untransformed first observation problem in regression model with moving average process. *Communications in Statistics: Theory and Methods*, 23(10), 2927-2937.
- Choudhury, A., Hubata, R., & St. Louis, R. (1999). Understanding time-series regression estimators. *The American Statistician*, 53(4), 342-348.
- Choudhury, A., Jones, J.R., Gamage, J., & Ostaszewski, K. (2008). Structural change in the CPCU curriculum and its effect on the completion time. *Academy of Educational Leadership Journal*, 12(2), 95-108.

- Dale, L.R., & Crawford, J. (2000). Student performance factors in economics and economic education. *Journal of Economics and Economic Education Research*, 1, 45-53.
- Dik, B. J., Sargent, A. M., & Steger, M. F. (2008). Career development strivings: Assessing goals and motivation in career decision-making and planning. *Journal of Career Development*, 35(1), 23-41.
- Doran, B.M., Bouillon, M.L., & Smith, C.G. (1991). Determinants of student performance in Accounting Principles I and II. *Issues in Accounting Education*, 6(1), 74-84.
- Gallos, J. V. (1995). Gender and silence: implications of women's ways of knowing. *College Teaching*, 43(3), 101-5.
- Gilligan, C. (1982). In a different voice: Psychological theory and women's development. Cambridge, MA: *Harvard University Press*.
- Heath, J.A. (1989). Factors affecting student learning — An econometric model of the role of gender in economic education. *Journal of Economic Education*, 20(2), 226-230.
- Igbaria, M., & Chakrabarti, A. (1990). Computer anxiety and attitudes toward microcomputer use. *Behavior and Information Technology*, 9(3), 220-241.
- Ilgen, D.R., & Youtz, M.A. (1986). Factors affecting the evaluation and development of minorities in organizations. In K. Rowland and G. Ferris (eds.). *Research in Personnel and Human Resource Management: A Research Annual*. Greenwich, 1986, 307-337. CT: JAI Press.
- Katz, L., & Autor, D. (1999). Changes in the wage structure and earnings inequality. in O. Ashenfelter and D. Card (eds.), *Handbook of Labour Economics*, 3, 1463–1555.
- Larwood, L., Gutek, B.A., & Gattiker, U.E. (1984). Perspective on institutional discrimination and resistance to change. *Group and Organizational Studies*, 9, 333-352.
- Lipe, M.G. 1989. Further evidence on the performance of female versus male accounting students. *Issues in Accounting Education*, 4(1), 144-152.
- McGrattan, E. R., & Rogerson, R. (2004). Changes in hours worked, 1950–2000. *Federal Reserve Bank of Minneapolis Quarterly Review*, 28(1), 14- 33.

- Milkie, M. A., Bianchi, S. M., Mattingly, M. J., & Robinson, J. P. (2002). Gender division of childrearing: Ideals realities, and the relationship to parental well-being, *Sex-Roles*, 47, 21-38.
- Morrison, A.M., & Von Glinow, M.A. (1990). Women and minorities in management. *American Psychologist*, 45(2), 200-208.
- Mutchler, J.F., Turner, J.H., & Williams, D.D. (1987). The performance of female versus male accounting students. *Issues in Accounting Education*, 2(1), 103-111.
- Neal, D. (1995). Industry-Specific human capital: Evidence from displaced workers. *Journal of Labor Economics*, 13(4), 653-677.
- Ng, T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Predictors of objective and subjective career success: A meta-analysis. *Personnel Psychology*, 58(2), 367-408.
- Richardson, J.T.E. (2000). *Researching student learning*. Buckingham: SRHE and Open University Press.
- Rozell, E.J., & Gardner, W.L. (1999). Computer-related success and failure: A longitudinal field study of the factors influencing computer-related performance. *Computers in Human Behavior*, 15(1), 1-10.
- SAS/STAT User's Guide. (1993). *SAS Institute, Inc*, Cary, North Carolina.
- Sicherman, N., & Galor, O. (1990). A theory of career mobility. *The Journal of Political Economy*, 98(1), 169-192.
- Schwartz, F.N. (1989). Management women and the new facts of life. *Harvard Business Review*, 67(1), 65-76.
- Shen, J., & Deng, X. (2008). Gender wage inequality in the transitional Chinese economy: A critical review of post-reform research. *Journal of Organisational Transformation and Social Change*, 5(2), 109-127.
- Smith, B.N., & Necessary, J.R. (1996). Assessing the computer literacy of undergraduate college students. *Journal of Education*, 117(2), 188-193.
- Sturman, M. C., Walsh, K., & Cheramie, R. A. (2008). The value of human capital specificity versus transferability. *Journal of Management*, 34, 290-316.
- Viscusi, W.K. (1980). Sex differences in worker quitting. *Review of Economics and Statistics*, 62(3), 388-398.

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