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# The Relationship between Creative Self-Efficacy, Achievement Motivation, and Job Burnout among Designers in China's e-Market

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**Abstract:** The e-market is prosperous in China, but the factors that stimulate or deter its development remain unclear. This study focuses on designers (interaction, user interface, product, and user experience designers) in the Chinese e-marketplace to examine the relationship between creative self-efficacy (CSE), achievement motivation (including motivation to approach success [MS], and motivation to avoid failure [MF]), and job burnout. Eighty-two questionnaires and eight in-depth interviews were used to collect data. The designers were found to be experiencing intermediate levels of job burnout. However, their achievement motivation and CSE were relatively high, and achievement motivation acted as an overarching factor that triggered CSE. The study contributes to the field by providing theoretical evidence showing how achievement motivation and job burnout influence designers' CSE. We show the value of the need to increase employees' achievement motivation, which builds CSE naturally. To conclude, we suggest that achievement motivation may be more critical for firms, as employees will handle their work seriously with a higher sense of responsibility.



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**Keywords:** job burnout; achievement motivation; creative self-efficacy; creativity; innovation; designers; China's e-market

## 1. Introduction

According to a report published by [McKinsey and Company \(2017\)](#), China is increasingly recognized as a global leader in the e-market sector. China accounted for 40% of the value of worldwide transactions in e-commerce, a share larger than that of Germany, Japan, and the United Kingdom combined. In November 2020, China's listed e-market companies reached a total value of 16.80 trillion yuan worldwide (US\$2.64 trillion), up 51.2% from the end of 2019 ([The 47th Statistical Report 2021](#)). Behind the scenes, it is commonly known that design generates meaning and influences people's lives through its outcome, but most designers are required to be the executant ([Heskett et al. 2017](#)). Exploring what deters or stimulates a designer's creativity to empower market innovation is a pressing matter. As a result, it is not surprising that research into creative self-efficacy has increased in education and business, particularly in design. Creative self-efficacy (CSE), the belief that one has in one's ability to produce creative outcomes, is essential for these designers to generate innovative products or ideas ([Huang et al. 2020](#); [Newman et al. 2018](#); [Tang et al. 2017](#); [Hu and Zhao 2016](#)). The spotlight on CSE has revealed that CSE is the foundation for innovative behavior ([Grosser et al. 2017](#); [Newman et al. 2018](#); [Javed et al. 2021](#)). It also predicts innovative behavior ([Gong et al. 2009](#)), such as student performance or employee creativity ([Teng et al. 2020](#); [Royston and Reiter-Palmon 2019](#); [Puentes-Diaz and Cavazos-Arroyo 2018](#); [Gong et al. 2009](#)).

Undoubtedly, the CSE of designers is very valuable as it allows companies to innovate and remain competitive in the market. It has been found that individuals with high CSE are more confident, and therefore more willing to experiment with innovation activities, spend more time and effort defining problems, as well as seek resources and support from

colleagues (Jiang and Gu 2017). Moreover, employees with high CSE take more initiative to experiment with solutions, improve products, and take risks in the design process (Teng et al. 2020; Royston and Reiter-Palmon 2019).

However, although evidence has shown that CSE significantly affects individual innovation behaviors (Javed et al. 2021; He et al. 2020; Teng et al. 2020), far less work has examined the effect of achievement motivation and job burnout. Achievement refers to accomplishment and attainment involving effort (Mandel and Marcus 1991), while motivation relates to why a person engages in an activity: the higher a person's motivation, the more they will persist in the activity (Graham and Weiner 1996). The key driver for achievement motivation is the determination and commitment to excellence generated within individuals aiming to perform some activities better than anyone else (Brunstein and Heckhausen 2018). Regarding the nature of CSE and achievement motivation, the former is more belief-oriented, and the latter is more action-oriented.

Another factor that may lead to low CSE is job burnout, a physical or emotional state in which employees experience less passion or enthusiasm for their work (Freudenberger 1974). It relates to hopelessness when attempting to solve work problems effectively (Stamm 2010). More specifically, job burnout involves physical and mental exhaustion that causes lower motivation and lower productivity at work, and is a reaction to pressure from work (Safari et al. 2020). Despite this, a concise conclusion can be drawn that individuals' problem-solving skills and creativity are connected with job burnout (Derakhshanrad et al. 2019). Many researchers have focused on stimulating designers' creativity by examining the components of creativity, the design thinking process, and the measurement or tools for creativity. However, CSE as a prerequisite is vital for creativity, and achievement motivation and job burnout may impact CSE. There is an apparent absence of a detailed description of these three factors.

Hence, this paper investigates the relationship between CSE, job burnout, and achievement motivation. They were tested via empirical research on the experiences of design professionals working in the e-market. Our study contributes to CSE scholarship by highlighting how it can be leveraged to achieve better design by minimizing the hindrances caused by job burnout and achievement motivation. Thus, it aims to enable better and more pragmatic strategies to support the CSE of designers and avoid implementing practices that reduce it.

## 2. Theory and Hypotheses

### 2.1. Creative Self-Efficacy

In design, creative activities refer to innovation initiation, facilitating problem-solving, and new product development with novelty and usefulness (Sarkar and Chakrabarti 2011). Novelty refers to products that are new to the market and must eliminate some existing features, and usefulness represents the design outcomes that customers can use. Moreover, developing innovative and valuable products is defined as creativity in psychological studies (Runco and Jaeger 2012). Designers should provide the possible features of new artifacts, such as the color, dimensions, materials, and decorations, through prototypes (Cross 1982). In addition, designers suggest a possible solution to a particular problem through reformation, conceptualization, and the transformation between divergent and convergent thinking. In particular, the shift between thinking processes is also an essential capacity for designers (Hu et al. 2021). Divergent thinking refers to generating various ideas, whereas convergent thinking indicates the synthesis of ideas. It has been demonstrated that designers can effectively shift their attention and thinking style during the design process (Cross 1982). During the shift, the expression of tacit knowledge through non-verbal media is a fundamental ability for designers (Cross 1982). It can be concluded that the design process is a creative process that requires creativity-oriented abilities to solve problems.

Creative self-efficacy is the foundation of the creative process or performance (Puentes-Díaz and Cavazos-Arroyo 2017; Hardy et al. 2017). Self-efficacy refers to individuals' belief in their capacity to execute the behaviors necessary to achieve their goals (Bandura and

Adams 1977), which includes CSE as the belief that one can produce innovative outcomes (Farmer and Tierney 2017). CSE is also described as an individual's self-perceived capacity to engage in creative behavior (Abbott 2010). Empirical studies have demonstrated that creativity is positively related to CSE in professional or educational settings (Liu et al. 2017; Puente-Díaz and Cavazos-Arroyo 2017; Newman et al. 2018; Hallak et al. 2018). For example, Huang et al. (2020) have demonstrated that CSE predicts creative performance for engineering design creativity. More specifically, CSE positively relates to problem-solving quality and idea originality (Royston and Reiter-Palmon 2019).

By contrast, some other studies have identified that low CSE may result in negative performance and deficiency in achieving work goals (Du et al. 2020). Employees with low CSE tend to rely on existing solutions and give up easily when faced with difficulties (Richter et al. 2012). Thus, identifying factors that may affect CSE is essential when attempting to increase a company's competitiveness in innovation. Some studies have examined how organizational error management can increase employees' CSE (Du et al. 2015) and can be predicted by leadership and extrinsic rewards (Javed et al. 2021; Malik et al. 2015). Cai et al. (2019) proved that CSE could be improved by entrepreneurial leadership. Shifting the lens to methods or tools, a computer-aid program was developed to stimulate CSE (Chang et al. 2019). Others have viewed CSE as a mediator of the relationship between innovation behaviors and creativity (Royston and Reiter-Palmon 2019; Newman et al. 2018; Hu and Zhao 2016; Zhang and Long 2013). Several studies have focused on CSE in China in the organizational context, with particular emphasis on general employees (He and Wong 2021; Hu and Zhao 2016). Overall, the research on designers' CSE remains relatively marginal.

## 2.2. Creative Self-Efficacy and Achievement Motivation

Achievement refers to accomplishment and attainment involving effort (Mandel and Marcus 1991), while motivation relates to why a person engages in an activity; the higher a person's motivation, the more they will persist in the activity (Graham and Weiner 1996). McClelland et al. (1953) state that achievement motivation is competition with a standard of excellence. Wigfield and Eccles (2000) highlight the personality traits among individuals due to their different tendencies to do things, such as finishing minimum requirements or completing with excellence. It has been frequently shown that employee motivation for their work is a critical managerial challenge that should be addressed to stimulate workers to contribute more effort and perform better, in order to optimize organizational efficiency (Din et al. 2014; Lather and Jain 2005; Chan 2019). However, due to the diversity of motivation, employees may be stimulated by different types of motivation. Particularly for designers, achievement motivation is crucial to generating creative output. Achievement motivation predicts an individual's performance over the long term and motivates employees to perform better at work, enjoy competition, and be willing to accept negative feedback on their performance. Achievement motivation is composed of two dimensions (Gjesme and Nygard 1970): motivation to approach success (MS) and motivation to avoid failure (MF). Employees with a tendency toward MS prefer to complete high-priority tasks with a high standard in terms of quality, are more dedicated and persistent, tend to evaluate scenarios positively, and are confident that they will achieve the expected results. By contrast, MF refers to avoiding challenging tasks that may lead to failure and evaluating situations negatively. Therefore, companies must be able to manage and stimulate their employees' MS and reduce the MF so that employees' potential can be unleashed (Dew 2009).

In terms of the connection between achievement motivation and creative self-efficacy, they both play an essential role in professional development. For example, self-efficacy refers to individuals' belief in their capacity to execute the behaviors necessary to achieve their goals (Bandura and Adams 1977) and reflects an individual's confidence in their motivation and the effectiveness of their behavior at the cognitive level. Meanwhile, achievement motivation involves individual commitment to achieving excellence, which is

more action-oriented. Although self-efficacy is not the same as achievement motivation, both qualities involve the confidence to perform specific behaviors and excel. Accordingly, self-efficacy and achievement motivation positively correlate (Zhang et al. 2015), and self-efficacy influences achievement motivation (Alhadabi and Karpinski 2020; Jamil and Mahmud 2019). Furthermore, increased self-efficacy improves achievement motivation (Benawa 2018). Despite a vast number of studies that have shown that motivation is a crucial factor that affects creativity, Gagné (2014) stresses that motivation is the core factor that generates competitiveness and the heart of organizational actions, as motivation impacts the efficiency and performance of behaviors (Fischer et al. 2019). Tang et al. (2020) further clarify that intrinsic motivation greatly influences creativity by leading people to positively engage in an activity and attain achievements.

According to the above discussion, research seldom examines the connection between CSE and achievement motivation. We assume achievement motivation draws significantly on CSE, as achievement motivation involves actions to fulfill the commitment, while CSE is the belief to guide the action. Based on the above literature, we hypothesize the opposite effects of achievement motivation on CSE:

**Hypothesis 1 (H1).** *MS positively affects CSE, while MF negatively affects CSE.*

### 2.3. Creative Self-Efficacy and Job Burnout

Freudenberger (1974) proposed the concept of “job burnout,” defining it as a physical or emotional state that afflicts employees who have lost their passion or enthusiasm for work. It relates to feelings of hopelessness in solving work problems effectively (Stamm 2010). Burnout is caused by long-term overwork, leading to energy loss and the cultivation of negative attitudes about work (Maslach and Jackson 1984). Consequently, job burnout causes three reactions towards work (Maslach and Jackson 1981): emotional exhaustion, as in being emotionally exhausted and having no passion for work; depersonalization, meaning dissatisfaction with colleagues, detachment from the organization and social distance from colleagues, and following rigid rules to solve work tasks instead of finding solutions creatively; and reduced personal accomplishment, which entails negative self-image, sense of inability to solve problems, and feeling hopeless about making a positive difference. Overall, Job burnout is generally considered the influential factor of CSE, as CSE reflects job performance, creativity, confidence, successful problem-solving, and stimulating employee innovation (Huang et al. 2020; Newman et al. 2018). In particular, when encountering challenges, employees with high CSE take them as an opportunity to innovate instead of seeing them as a barrier (Newman et al. 2018).

As seen above, designers’ confidence in their ability to solve problems is the foundation of CSE. We speculate that job burnout can cause individuals to develop a negative self-evaluation, believing that their efforts are useless and that it is better to focus on achieving the minimum requirements at work. Based on the above discussion, we propose the following hypothesis:

**Hypothesis 2 (H2).** *Job burnout in designers negatively affects their CSE.*

## 3. Materials and Methods

In this paper, we adopted both qualitative and quantitative methods to test the two hypotheses formulated in the previous section. Mixed methods have several advantages: the first method is used to inform the second method, broadens the scope and breadth of an investigation, and offers additional, overlapping support for the study’s findings (Greene et al. 1989). In this study, we used an online questionnaire to measure the variables of interest and analyze the correlations between CSE, achievement motivation, and job burnout. Eight in-depth semi-structured interviews were also conducted with selected participants from the questionnaire phase.

### 3.1. Questionnaire

The questionnaire was composed of three sections: creative self-efficacy, job burnout, and achievement motivation.

#### 3.1.1. Creative Self-Efficacy

The 6-point Likert-type scale developed by Carmeli and Schaubroeck (2007) was used to measure CSE. It consists of eight questions (e.g., "I will overcome many challenges creatively"). The options range from strongly disagree to strongly agree. Cronbach's alpha for this measure was 0.946.

#### 3.1.2. Job Burnout

We used the Chinese Maslach Burnout Inventory, created by Li (2003), which is a 7-point Likert-type scale that includes 15 questions to measure job burnout and comprises three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment (e.g., "I feel very tired at work"). The options range from completely disagree to completely agree. Cronbach's alpha for this measure was 0.818. This scale measures four levels of job burnout and is the most comprehensive job burnout scale used in China.

#### 3.1.3. Achievement Motivation Scale

The achievement motivation scale, as translated by Ye and Hagtvet (1992), was used in this study. It includes two subscales, each with 15 questions: the MS scale and the MF scale (e.g., "I like interesting, challenging, risky tasks" (MS), and "I worry I will fail at work when there is uncertainty" (MF)). The scale consists of 30 questions that are answered using a 4-point Likert scale ranging from "completely disagree" to "completely agree." Cronbach's alpha for this measure was 0.812.

#### 3.1.4. Demographic Variables

When testing the hypotheses, we controlled for age, gender, years of experience, company location, education, position, income, marital status, and the number of designers in the design team.

#### 3.1.5. Ethical Considerations

Every participant recruited in this study was informed regarding the purpose of it. The participants completed a consent form where the confidentiality of data was assured. Participation in the study was voluntary. Participants could withdraw at any time during the research process. Overall, the study was conducted following the ethical principles of The Hong Kong Polytechnic University to provide the respondent's anonymity and privacy.

### 3.2. Data Collection and Analysis

An online version of the questionnaire was prepared and distributed to designers working on Chinese e-market platforms in first-tier cities in China, including Beijing, Shenzhen, Guangzhou, and Shanghai. We invited interaction designers, user interface designers, product designers, and user experience designers. The questionnaire link was sent to online design community groups that were part of the research team's network.

In the second stage, we used purposeful sampling to target eight of the questionnaire participants for interviews, all of whom agreed to be interviewed (Table 1). Seven interviewees were invited from Shenzhen companies, where the local core mission is to innovate, which involves creativity. The interviews were conducted online. The interview questions were designed primarily to discuss the quantitative results and provide more in-depth information relevant to the study. The main interview questions included: "What are your attitudes toward the design task?", "How do these attitudes encourage and deter your belief in creativity?" and "How do you tackle the problems and make the decision when encountering challenges?".

**Table 1.** Interviewees.

ID	Firm Type	Establishment Year	Ownership	Firm Size	Interviewee	Location
#1	Design consultancy	2019	Private	26	Product director	Shenzhen
#2	Design consultancy	2018	Private	12	Product designer	Shenzhen
#3	Design consultancy	2008	Private	55	Design director	Shenzhen
#4	Fintech	2016	Private	52	Product director	Shenzhen
#5	Software	2020	Private	127	Interaction designer	Shenzhen
#6	Software and hardware	2019	Private	1000+	User experience designer	Shenzhen
#7	Online media	2019	Private	25	Content designer	Guangzhou
#8	Design consultancy	2020	Private	12	Graphic designer	Shenzhen

Additional data were gathered through publicly available documents, company websites, and images, thereby increasing the validity of the findings through data triangulation.

### 3.3. Data Analysis

To test the hypothesized relationships between CSE, job burnout, and achievement motivation, the data from the questionnaires were analyzed using SPSS 26. The data analysis consisted of calculating the Pearson correlation coefficients and running a stepwise regression. An analysis of variance (ANOVA) was used to test the differences between features of the dependent variables across subjects. The qualitative data from Stage two were transcribed and translated into English, and each transcript was coded using three themes: CSE, job burnout, and achievement motivation. Two team members interpreted the transcript to determine interrater reliability, with the percentage agreement being 95%.

### 3.4. Sample Description

Ninety-two data items were collected. Samples were challenging to collect because we specifically recruited interaction designers, user interface designers, product designers, and user experience designers instead of all employees. We excluded ten questionnaires with low reliability by counting the response time as either too short or too long. Eighty-two valid data were included in this research. The participants' average length of work experience was 4.98 years, with a standard deviation of 3.66. Their work locations included Beijing, Shanghai, Guangzhou, and Shenzhen. There were 32 men (39%) and 50 women (61%), and 68 of the participants (82.9%) were between 25 and 35 years of age. Thirty-nine participants (47.6%) had a postgraduate degree, and 43 (52.4%) had an undergraduate degree. Thirty-two participants (39%) worked in a design team with fewer than eight members, and 50 (61%) worked in a team with more than eight members. Sixteen participants (19.5%) had a monthly income below RMB10,000, 41 (50%) had a monthly income between RMB10,000 and RMB20,000, and 25 had an income above RMB20,000. Sixty participants (73%) were unmarried, and 22 (27%) were married.

## 4. Results

### 4.1. Control Variables

We examined the effects of various demographic characteristics on the three dependent variables: CSE, job burnout, and achievement motivation (Table 2). Independent samples t-tests showed that gender significantly affected MS, the total score for achievement motivation, and CSE. Men scored significantly higher than women on MS ( $t = 2.536$ ,  $p < 0.05$ ) and CSE ( $t = 2.405$ ,  $p < 0.05$ ). Reduced personal accomplishment in job burnout also varied significantly between genders ( $t = -1.783$ ,  $p < 0.1$ ); other demographic variables, such as job position, age, educational background, and salary level, had no effect on the dependent variables.

**Table 2.** Independent samples t-test.

				Men (n = 32)		Women (n = 50)	
	t	df	Sig	M	SD	M	SD
Emotional exhaustion	−0.077	80	0.939	18.187	6.897	18.300	6.221
Depersonalization	0.602	80	0.549	12.218	5.071	11.540	4.924
Reduced personal accomplishment	−1.783	80	0.078	14.687	4.882	16.600	4.646
Motivation to success (MS)	2.536 *	80	0.013	42.250	6.405	39.140	4.686
Motivation to avoid failure (MF)	−1.272	80	0.207	34.625	7.408	36.620	6.602
Achievement motivation	2.044 *	80	0.044	7.625	12.620	2.520	9.899
Creative self-efficacy	2.405 *	80	0.019	4.300	0.986	3.762	0.990

Note: N = 82 \*  $p < 0.05$ .

#### 4.2. Preliminary Analyses

These quantitative results showed that most of the designers surveyed had a moderate level of job burnout (Table 3). The main problems were depersonalization and reduced personal accomplishment according to the evaluation standard. Individuals experiencing depersonalization behave negatively, coldly, and excessively distantly in the workplace, often feeling that colleagues' demands are a burden. They intend to minimize interaction with colleagues and follow rigid rules to avoid solving problems and meeting colleagues' needs. Individuals experiencing reduced personal accomplishment evaluate their work and performance negatively and feel a reduced sense of job competence and achievement at work. If designers feel this way at work, they will have less motivation to engage in their work and less desire to succeed. Interviewees #1, #2, and #3 all reported that extremely easy or difficult Key Performance Indicators (KPIs) might be one reason designers experience reduced personal accomplishment. Unreasonable demands and competitive pressure can make designers feel they cannot accomplish their goals no matter how hard they work. These designers aim to avoid failure and mistakes when working with minimum requirements. In addition, feeling dispensable or unnecessary at the company was also mentioned. Moreover, Interviewee #3 quoted a proverb to describe this state for newcomers in the Chinese workplace: "I don't know, and I don't dare ask." Similarly, participant #7 mentioned that the assessment of designers' work is uncertain. For example, if an application is updated with a new interface or new interaction possibilities. In that case, the standard approach to determine whether this iteration is successful is to look at changes in the application's data, including the number of daily active users, the number of monthly active users, and the duration of use of the application. However, these data do not yield specific feedback on the design, and the effects of the design cannot be directly extracted from product metrics. Designers must receive feedback on their work, either positive or negative, as this affects their sense of personal accomplishment.

**Table 3.** Means, standard deviations, and t-test results.

	M	SD	Comparison Value	t
Emotional exhaustion	18.2561	6.45174	25	−9.465 **
Depersonalization	11.8049	4.96267	11	1.469
Reduced personal accomplishment	15.8537	4.80258	16	−0.276
Motivation to success (MS)	40.3537	5.59623		
Motivation to avoid failure (MF)	35.8415	6.95216		
Achievement motivation	4.5122	11.24831	0	3.633 **
Creative self-efficacy	3.9726	1.01760		

Note: N = 82 \*\*  $p < 0.001$ .

The comparison value is the standard from questionnaires that should be used to compare with the result to confirm the level or performance of the participants. The level of achievement motivation was determined by comparing it with 0 (MF-MS). A score greater

than 0 indicates strong achievement motivation, and a score less than 0 indicates weak achievement motivation.

The average achievement motivation was 4.51 ( $t = 3.633^{**}$ ), significantly higher than the standard measurement of 0. The mean of CSE was 3.97 ( $t = 1.002$ ). Our interview data suggested that continuous self-encouragement is needed to generate innovative outcomes as there are typically no clear criteria to encourage designers to do better. Thus, internal guidelines and expectations become more critical to stimulating achievement motivation and CSE.

#### 4.3. Main Results: Pearson Correlations and Stepwise Regression

The results of the Pearson correlation analysis are shown in Table 4. As predicted, the designers' CSE was positively and significantly correlated with their MS ( $r = 0.579$ ,  $p < 0.01$ ) and their total achievement motivation score ( $r = 0.556$ ,  $p < 0.01$ ). CSE was negatively correlated with MF ( $r = -0.433$ ,  $p < 0.01$ ).

**Table 4.** Pearson's correlations.

	M	SD	Emotional Exhaustion	Depersonalization	Reduced Personal Accomplishment	Motivation to Success	Motivation to Avoid Failure	Achievement Motivation
Emotional exhaustion	18.2561	6.45174						
Depersonalization	11.8049	4.96267	0.504 **					
Reduced personal accomplishment	15.8537	4.80258	0.112	0.302 **				
Motivation to success	40.3537	5.59623	-0.218 *	-0.219 *	-0.501 **			
Motivation to avoid failure	35.8415	6.95216	0.478 **	0.410 **	0.388 **	-0.602 **		
Achievement motivation	4.5122	11.24831	-0.404 **	-0.362 **	-0.489 **	0.870 **	-0.918 **	
Creative self-efficacy	3.9726	1.01760	-0.166	-0.167	-0.548 **	0.579 **	-0.433 **	0.556 **

Note: N = 82 \*  $p < 0.05$ , \*\*  $p < 0.01$  (two-tailed).

CSE was negatively and significantly correlated with the job burnout dimension of reduced personal accomplishment ( $r = -0.548$ ,  $p < 0.01$ ), but was not associated with depersonalization or emotional exhaustion. The result provided partial but not full support for H2, as the association was found for only one of the three job burnout dimensions.

All of the dimensions of job burnout were found to be significantly correlated with achievement motivation. Emotional exhaustion was positively correlated with MF ( $r = 0.478$ ,  $p < 0.01$ ), while MS ( $r = -0.218$ ,  $p < 0.05$ ) and the total achievement motivation score ( $r = -0.404$ ,  $p < 0.01$ ) were negatively correlated with emotional exhaustion. Depersonalization and MF were positively correlated ( $r = 0.410$ ,  $p < 0.01$ ), while depersonalization was negatively correlated with MS ( $r = -0.219$ ,  $p < 0.05$ ) and the total achievement motivation score ( $r = -0.362$ ,  $p < 0.01$ ). Reduced personal accomplishment was positively correlated with MF ( $r = 0.388$ ,  $p < 0.01$ ) and negatively correlated with MS ( $r = -0.501$ ,  $p < 0.01$ ) and the total achievement motivation score ( $r = -0.489$ ,  $p < 0.01$ ).

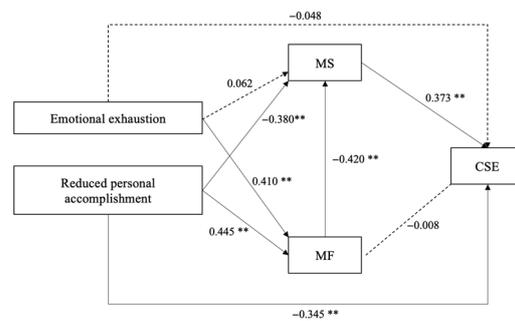
We performed a stepwise regression to test further the relationships between CSE, job burnout, and achievement motivation (shown in Table 5). According to the results of this regression, MS and reduced personal accomplishment had significant predictive power for CSE, accounting for 42.5% of the variance in this factor; emotional exhaustion and CSE had substantial predictive power for MF, accounting for 35.7% of the variance in this factor; and CSE and MF had predictive power for MS, accounting for 38.4% of the variance in this factor. These results supported H1, suggesting that CSE is positively affected by MS, but it was negatively correlated with MF.

**Table 5.** Stepwise regression.

Dependent Variables	Estimate	$\beta$	t	p	r	R <sup>2</sup>
(1) Creative self-efficacy	Constant	2.145				
	Motivation to success	0.407	4.126 **	0.000	0.652	0.425
	Reduced personal accomplishment	−0.345	−3.494 **	0.001		
(2) Motivation to avoid failure (MF)	Constant	26.441				
	Emotional exhaustion	0.418	4.565 **	0.000	0.598	0.357
	Creative self-efficacy	−0.364	−3.979 **	0.000		
(3) Motivation to success (MS)	Constant	27.694				
	Creative self-efficacy	0.436	4.126 **	0.000	0.620	0.384
	Reduced personal accomplishment	−0.262	−2.482 *	0.015		

Note: N = 82. \*  $p < 0.05$ , \*\*  $p < 0.001$ .

The path analysis visually presents the predictive relationship between job burnout, achievement motivation, and CSE (Figure 1). The findings indicated that MS and reduced personal accomplishment predicted the CSE, and the level of reduced personal accomplishment predicted MS. In contrast, MF negatively predicted MS. Moreover, the reduced personal accomplishment was predicted for MS and MF in opposite ways.



Note: \*\*  $p < 0.001$ .

**Figure 1.** Path Analysis.

**5. Discussion**

This study first explored how achievement motivation and job burnout could affect CSE.

The first result is that the Chinese e-market designers surveyed in this study are experiencing intermediate levels of job burnout, particularly in the dimensions of de-personalization and reduced personal accomplishment. The possible explanation is that companies with an established design process stress productivity more than creativity, which steers designers’ work passively rather than creatively. In addition, the work generated by designers is evaluated by rigid external processes instead of company standards, and the stymied situation results in job burnout. For this reason, designers need to strongly believe in their creativity to generate innovative products or services, which results in designers’ achievement motivation and CSE being relatively high.

The mean CSE score of the designers in our study was 3.97, which is considerably higher than that found by Hu and Zhao (2016), who calculated a mean CSE of 1.965 for 274 general employees in the technology and service industries across four Chinese cities. Interviewees #2 and #3 reported that they experienced the greatest CSE when immersing themselves in design tasks. Companies must create an environment where designers feel psychologically safe enough to immerse themselves in their work. Among other demographic variables, CSE was significantly influenced by gender. In particular, our findings indicate that men scored significantly higher than women on both MS ( $t = 2.536, p < 0.05$ ) and CSE ( $t = 2.405, p < 0.05$ ). When improving the working environment, companies

should also consider personal differences among employees. In addition, some degree of autonomy is necessary for designers to take the initiative. As [Kim and Beehr \(2017\)](#) recommend, encouraging the employee's initiative can facilitate self-efficacy and increase sense of belonging; thereby, CSE could be improved.

For the correlation between CSE and job burnout, reduced personal accomplishment was (significantly) negatively correlated and predicted with CSE. This result provides a detailed insight to the study by [Lee et al. \(2020\)](#), which demonstrated that job burnout harmed employees' attitudes and behaviors. The typical behavior for reduced personal accomplishment consists of negatively evaluating one's work and performance and having a reduced sense of job competence and accomplishment. Designers portrayed themselves as incompetent and worthless at work, producing insufficient power to generate CSE. Emotional exhaustion was not correlated with CSE, which is further supported by the study that shows emotional engagement stimulates creativity, whereas negative emotions are less related ([Mastria et al. 2019](#)). We suggest that the CSE involves more cognitive processes, and primarily focuses on internal self-reflection. Emotional exhaustion is the main factor related to job burnout that emphasizes that the emotional process explicitly targets work tasks. These are two distinct psychological processes, and it is reasonable that the correlation does not exist.

Furthermore, depersonalization is mainly reflected in negative and distanced social interaction, which was also not correlated with CSE. This result is slightly different from the study conducted by [Cai et al. \(2019\)](#), which found that interaction between leaders and the team is essential to engaging and supporting creative activities. We claim that the CSE is especially about self-evaluation from a creative perspective. It is more internally driven than induced by external influences such as social interaction or rewards. This finding is consistent with the research conducted by [Gu et al. \(2017\)](#), that observed how CSE impacts creativity by influencing intrinsic motivation.

We explored how achievement motivation relates to CSE. Based on the data, MS was positively correlated and predicted with CSE, while MF was negatively correlated. The effects of MS and MF on CSE are controversial. Our findings are consistent with previous studies that show motivation is crucial to promoting or deterring creativity ([Brunstein and Heckhausen 2018](#)). MS relates to an individual's self-confidence and persistence; therefore, this construct shares features with CSE, as CSE reflects an individual's confidence to overcome difficulties and uncertainty. For example, interviewees #4, #6, and #7 mentioned that the more capable they felt of solving problems, the more they engaged in the innovation process. This persistence and engagement reinforced their CSE. In addition, the stronger the MS, the weaker the MF. People with high MF are more inclined to engage in activities that are particularly easy to succeed in or not particularly easy to fail, while people with high MS tend to perform with a 50% success rate; appropriate risk-taking is a distinguishing factor for outstanding creative performance. Given these relationships, designers with high MF work conservatively to meet minimum standards and avoid mistakes. In particular, high MF prompts the designers to depend more on rigid rules or imitations of existing solutions than on initiative and creativity, which negatively correlates with CSE.

In a recent notable study, autonomous motivation is the main drive for creativity; when individuals feel controlled by extrinsic rewards that distract them from behaving freely, the reward can lead to lower creativity ([Kumar et al. 2022](#)). In this situation, if the firm uses extrinsic rewards to stimulate designers' motivation to perform better, employees' CSE is crucial to improving the effectiveness of extrinsic rewards ([Malik et al. 2015](#)). That is, when designers feel that the work itself is interesting enough, they can enjoy the work. Nevertheless, when the goal is to attain external rewards, CSE is crucial for designers to successfully perform the tasks as they believe they can obtain the external rewards with a high probability.

Regarding the specific cultural background of this study, the Chinese cultural background is collectivist. Under this situation, employers may be more likely to follow market trends and employees may tend to comply with their employers' decisions, which could

affect their CSE and achievement motivation. As Interviewee #4 noted, the consequence of this work culture is that designers feel that they do not want to be “too distinguished”, as one of the evaluation criteria for a designer’s work is the reference to a similar product already on the market. In addition, interviewee #7 commented: “Leaders require us to check how our competitors generate a design outcome, and we need to do a similar thing. I will immediately be questioned and corrected if the design output is too innovative, as the correctness of the design is more important than its creativity”. Furthermore, from the employers’ perspective, hiring highly creative or achievement-motivated designers can be risky. As interviewee #1 mentioned: “They may not work well with the team because they are so different. I do not need these brilliant people; I need someone who can finish the task”. The empirical data lend insight into how to interpret the quantitative results considering the collectivist cultural background. In this environment, creativity may be further mediated by the necessity of following market trends, hierarchical leadership, and teamwork dynamics, as well as aligning with competitors’ design outcomes.

## 6. Conclusions and Implications

This study examined CSE in China’s e-market designers. Designers in the Chinese e-market were found to be experiencing intermediate levels of job burnout; however, their achievement motivation and CSE were relatively high. We examined achievement motivation as an overarching variable that nourishes CSE, extending previous studies (Du et al. 2020; Gu et al. 2017; Hu and Zhao 2016; Zhang and Long 2013). Additionally, motivation to success and motivation to avoid failure are oppositely correlated with CSE. We argue that higher levels of achievement motivation result in higher levels of stimulation, thus generating higher CSE. In an organization, managers should select designers based on their achievement motivation, which builds CSE and leads to more creative outcomes by handling their work with greater responsibility. Creative individuals generate ideas quickly, but if there is no motivation to promote or institute those ideas, the ideas are useless (Gaynor 2002). Managers should therefore consider combining team members with different traits and leveraging these traits for maximum innovation.

## 7. Limitations and Future Research Directions

This study has several limitations. First, social desirability bias in the interview responses may have compromised external validity. A longitudinal or experimental study could be conducted to test these relationships. Second, 82 questionnaires were collected in this study, and this sample size may have affected the result. Previous studies had a larger sample size because they invited all the employees of a company (e.g., Hu and Zhao 2016), while we only targeted designers. Third, this study focused on e-market designers in first-tier cities; social desirability may be involved during the recruiting or interview process. Further investigation of other regions or other occupations is needed to avoid such bias as creativity is, of course, not exclusively needed by designers; it is also essential for managers, entrepreneurs, and researchers involved in product development (Sarkar and Chakrabarti 2011).

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## References

- Abbott, Daniel H. 2010. Experiencing creative self-efficacy: A case study approach to understanding creativity in blogging. *Journal of Media and Communication Studies* 2: 170–75.
- Alhadabi, Amal, and Aryn C. Karpinski. 2020. Grit, self-efficacy, achievement orientation goals, and academic performance in University students. *International Journal of Adolescence and Youth* 25: 519–35. [CrossRef]
- Bandura, Albert, and Nancy E. Adams. 1977. Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research* 1: 287–310. [CrossRef]
- Benawa, Arcadius. 2018. The important to growing self-efficacy to improve achievement motivation. In *IOP Conference Series: Earth and Environmental Science*. Bristol: IOP Publishing, vol. 126, No. 1. p. 012086.
- Brunstein, Joachim C., and Heinz Heckhausen. 2018. Achievement motivation. In *Motivation and Action*. Cham: Springer, pp. 221–304.
- Cai, Wenjing, Evgenia I. Lysova, Svetlana N. Khapova, and Bart AG Bossink. 2019. Does entrepreneurial leadership foster creativity among employees and teams? The mediating role of creative efficacy beliefs. *Journal of Business and Psychology* 34: 203–17. [CrossRef]
- Carmeli, Abraham, and John Schaubroeck. 2007. The influence of leaders' and other referents' normative expectations on individual involvement in creative work. *The Leadership Quarterly* 18: 35–48. [CrossRef]
- Chan, Yuet Kai. 2019. An Analytical Study of Motivation for Creative Workers in China's Creative Industries. PhD thesis, Hong Kong Polytechnic University, Hong Kong, China.
- Chang, Yu-shan, Mavis Yi-Ching Chen, Meng-Jung Chuang, and Chia-hui Chou. 2019. Improving creative self-efficacy and performance through computer-aided design application. *Thinking Skills and Creativity* 31: 103–11. [CrossRef]
- Cross, Nigel. 1982. Designerly ways of knowing. *Design Studies* 3: 221–27. [CrossRef]
- Derakhshanrad, Seyed Alireza, Emily Piven, and Bahareh Zeynalzadeh Ghoochani. 2019. The relationships between problem-solving, creativity, and job burnout in Iranian occupational therapists. *Occupational Therapy in Health Care* 33: 365–80.
- Dew, Nicholas. 2009. Serendipity in entrepreneurship. *Organization Studies* 30: 735–53. [CrossRef]
- Din, Muhammad Saadat, Mohsin Bashir, Khaliq Ur Rehman Cheema, and Sehrish Saba Zafar. 2014. The role of power distance in the relationship between employee motivation and organizational commitment: A study on education sector of Pakistan. *IOSR Journal of Business and Management* 16: 9–18. [CrossRef]
- Du, Peng, Cheng Jia, Yu Li Jia, and Ni Qing. 2015. Can errors be a source of innovation—A cross-level analysis based on the impact of error management culture on employee creativity. *Science and Technology Management Research* 35: 161–66.
- Du, Kaiye, Yan Wang, Xuran Ma, Zheng Luo, Ling Wang, and Baoguo Shi. 2020. Achievement goals and creativity: The mediating role of creative self-efficacy. *Educational Psychology* 40: 1249–69.
- Farmer, Steven M., and Pamela Tierney. 2017. *Considering Creative Self-Efficacy: Its Current State and Ideas for Future Inquiry*. Edited by M. Karwowski and J. C. Kaufman. The Creative Self: Effect of Beliefs, Self-Efficacy, Mindset, and Identity. Amsterdam: Elsevier, pp. 23–47. [CrossRef]
- Fischer, Carmen, Charlotte P. Malycha, and Ernestine Schafmann. 2019. The influence of intrinsic motivation and synergistic extrinsic motivators on creativity and innovation. *Frontiers in Psychology* 10: 137. [CrossRef] [PubMed]
- Freudenberger, Herbert J. 1974. Staff burn-out. *Journal of Social Issues* 30: 159–65. [CrossRef]
- Gagné, Marylène, ed. 2014. *The Oxford Handbook of Work Engagement, Motivation, and Self-Determination Theory*. Oxford: Oxford University Press.
- Gaynor, Gerard H. 2002. *Innovation by Design: What It Takes to Keep Your Company on the Cutting Edge*. New York: AMACOM.
- Gjesme, Torgrim, and Roald Nygard. 1970. *Achievement-Related Motives: Theoretical Considerations and Construction of a Measuring Instrument*. unpublished report. Oslo: University of Oslo.
- Gong, Yaping, Jia-Chi Huang, and Jiing-Lih Farh. 2009. Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. *Academy of Management Journal* 52: 765–78. [CrossRef]
- Graham, Sandra, and Bernard Weiner. 1996. Theories and principles of motivation. *Handbook of Educational Psychology* 4: 63–84.
- Greene, Jennifer C., Valerie J. Caracelli, and Wendy F. Graham. 1989. Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis* 11: 255–74. [CrossRef]
- Grosser, Travis J., Vijaya Venkataramani, and Giuseppe Joe Labianca. 2017. An alter-centric perspective on employee innovation: The importance of alters' creative self-efficacy and network structure. *Journal of Applied Psychology* 102: 1360. [CrossRef]
- Gu, Jibao, Changqing He, and Hefu Liu. 2017. Supervisory styles and graduate student creativity: The mediating roles of creative self-efficacy and intrinsic motivation. *Studies in Higher Education* 42: 721–42. [CrossRef]
- Hallak, Rob, Guy Assaker, Peter O'Connor, and Craig Lee. 2018. Firm performance in the upscale restaurant sector: The effects of resilience, creative self-efficacy, innovation, and industry experience. *Journal of Retailing and Consumer Services* 40: 229–40. [CrossRef]

- Hardy, Jay H., III, Alisha M. Ness, and Jensen Mecca. 2017. Outside the box: Epistemic curiosity as a predictor of creative problem solving and creative performance. *Personality and Individual Differences* 104: 230–37. [CrossRef]
- He, Wu-jing, and Wan-chi Wong. 2021. Gender differences in creative self-efficacy: Findings of mean and variability analyses. *Thinking Skills and Creativity* 42: 100955. [CrossRef]
- He, Peixu, Qiongyao Zhou, Hongdan Zhao, Cuiling Jiang, and Yenchun Jim Wu. 2020. Compulsory citizenship behavior and employee creativity: Creative self-efficacy as a mediator and negative affect as a moderator. *Frontiers in Psychology* 11: 1640. [CrossRef] [PubMed]
- Heskett, John, Clive Dilnot, and Suzan Boztepe. 2017. *Design and the Creation of Value*. Edited by C. Dilnot and S. Boztepe. London: Bloomsbury Academic.
- Hu, Bei, and Yidan Zhao. 2016. Creative self-efficacy mediates the relationship between knowledge sharing and employee innovation. *Social Behavior and Personality: An International Journal* 44: 815–26. [CrossRef]
- Hu, Ying, Zhenzhen Ren, Xing Du, Lan Lan, Wenyan Yu, and Shirao Yang. 2021. The shifting patterns based on six thinking hats and its relationship with design creativity. *Thinking Skills and Creativity* 42: 100946. [CrossRef]
- Huang, Neng-tang, Yu-shan Chang, and Chia-hui Chou. 2020. Effects of creative thinking, psychomotor skills, and creative self-efficacy on engineering design creativity. *Thinking Skills and Creativity* 37: 100695. [CrossRef]
- Jamil, Nor Liyana, and Siti Nur Diyana Mahmud. 2019. Self-efficacy relationship on science achievement amongst national secondary school students. *Creative Education* 10: 2509. [CrossRef]
- Javed, Basharat, Tasneem Fatima, Abdul Karim Khan, and Sajid Bashir. 2021. Impact of inclusive leadership on innovative work behavior: The role of creative self-efficacy. *The Journal of Creative Behavior* 55: 769–82. [CrossRef]
- Jiang, Wan, and Qinxuan Gu. 2017. Leader creativity expectations motivate employee creativity: A moderated mediation examination. *The International Journal of Human Resource Management* 28: 724–49. [CrossRef]
- Kim, Minseo, and Terry A. Beehr. 2017. Self-efficacy and psychological ownership mediate the effects of empowering leadership on both good and bad employee behaviors. *Journal of Leadership & Organizational Studies* 24: 466–78.
- Kumar, Nilesh, Zhiqiang Liu, Carol Flinchbaugh, Md Yahin Hossain, and Md Nahin Hossain. 2022. Impact of emotional labour on taking charge to predict employee's creative and task performance: The moderation of performance-based pay from the lens of self-determination theory. *PLoS ONE* 17: e0269196. [CrossRef] [PubMed]
- Lather, Anu Singh, and Shilpa Jain. 2005. Motivation and job satisfaction: A study of associates of public and private sector. *Delhi Business Review* 6: 77–84.
- Lee, Wonil, Giovanni C. Migliaccio, Ken-Yu Lin, and Edmund YW Seto. 2020. Workforce development: Understanding task-level job demands-resources, burnout, and performance in unskilled construction workers. *Safety Science* 123: 104577. [CrossRef]
- Li, Yong Xin. 2003. Job burnout and its measurement. *Psychological Science* 26: 556–57.
- Liu, Wenling, Yangu Pan, Xiaoman Luo, Lixia Wang, and Weiguo Pang. 2017. Active procrastination and creative ideation: The mediating role of creative self-efficacy. *Personality and Individual Differences* 119: 227–29. [CrossRef]
- Malik, Muhammad Abdur Rahman, Arif N. Butt, and Jin Nam Choi. 2015. Rewards and employee creative performance: Moderating effects of creative self-efficacy, reward importance, and locus of control. *Journal of Organizational Behavior* 36: 59–74. [CrossRef]
- Mandel, Harvey P., and Sander I. Marcus. 1991. *The Psychology of Underachievement: Differential Diagnosis and Differential Treatment*. Hoboken: John Wiley and Sons, vol. 127.
- Maslach, Christina, and Susan E. Jackson. 1981. The measurement of experienced burnout. *Journal of Organizational Behavior* 2: 99–113. [CrossRef]
- Maslach, Christina, and Susan E. Jackson. 1984. Burnout in organizational settings. *Applied Social Psychology Annual* 5: 133–53.
- Mastria, Serena, Sergio Agnoli, and Giovanni Emanuele Corazza. 2019. How does emotion influence the creativity evaluation of exogenous alternative ideas? *PLoS ONE* 14: e0219298. [CrossRef]
- McClelland, David C., John W. Atkinson, Russell A. Clark, and Edgar L. Lowell. 1953. Toward a Theory of Motivation. Available online: <https://psycnet.apa.org/record/2006-09558-002> (accessed on 15 September 2022).
- McKinsey and Company. 2017. Digital China: Powering the Economy to Global Competitiveness. December 3. Available online: <https://www.mckinsey.com/featured-insights/china/digital-china-powering-the-economy-to-global-competitiveness> (accessed on 25 October 2022).
- Newman, Alexander, H. M. Herman, Gary Schwarz, and Ingrid Nielsen. 2018. The effects of employees' creative self-efficacy on innovative behavior: The role of entrepreneurial leadership. *Journal of Business Research* 89: 1–9. [CrossRef]
- Puente-Díaz, Rogelio, and Judith Cavazos-Arroyo. 2017. The influence of creative mindsets on achievement goals, enjoyment, creative self-efficacy and performance among business students. *Thinking Skills and Creativity* 24: 1–11. [CrossRef]
- Puente-Díaz, Rogelio, and Judith Cavazos-Arroyo. 2018. An exploration of some antecedents and consequences of creative self-efficacy among college students. *The Journal of Creative Behavior* 52: 256–66. [CrossRef]
- Richter, Andreas W., Giles Hirst, Daan Van Knippenberg, and Markus Baer. 2012. Creative self-efficacy and individual creativity in team contexts: Cross-level interactions with team informational resources. *Journal of Applied Psychology* 97: 1282. [CrossRef] [PubMed]
- Royston, Ryan, and Roni Reiter-Palmon. 2019. Creative self-efficacy as mediator between creative mindsets and creative problem-solving. *The Journal of Creative Behavior* 53: 472–81. [CrossRef]
- Runco, Mark A., and Garrett J. Jaeger. 2012. The standard definition of creativity. *Creativity Research Journal* 24: 92–96. [CrossRef]

- Safari, Ali, Arash Adelpnah, Razieh Soleimani, Parisa Heidari Aqagoli, Rosa Eidizadeh, and Reza Salehzadeh. 2020. The effect of psychological empowerment on job burnout and competitive advantage: The mediating role of organizational commitment and creativity. *Management Research: Journal of the Iberoamerican Academy of Management* 18: 47–71. [CrossRef]
- Sarkar, Prabir, and Amaresh Chakrabarti. 2011. Assessing design creativity. *Design Studies* 32: 348–83. [CrossRef]
- Stamm, Beth. 2010. *The Concise Manual for the Professional Quality of Life Scale*. Eastwoods: LLC, The Concise ProQOL Manual.
- Tang, Min, Weiping Hu, and Huan Zhang. 2017. Creative self-efficacy from the Chinese perspective: Review of studies in mainland China, Hong Kong, Taiwan, and Singapore. *The Creative Self*, 237–57. [CrossRef]
- Tang, Chaoying, Xiaoyang Lu, and Stefanie E. Naumann. 2020. Intrinsic motivation and knowledge sharing in the mood–creativity relationship. *Journal of Management & Organization*, 1–13. [CrossRef]
- Teng, Chih-Ching, Cheng-Ming Hu, and Jung-Hua Chang. 2020. Triggering creative self-efficacy to increase employee innovation behavior in the hospitality workplace. *The Journal of Creative Behavior* 54: 912–25. [CrossRef]
- The 47th Statistical Report on the Development Status of the Internet in China. 2021. Available online: [http://www.cac.gov.cn/2021-02/03/c\\_1613923423079314.html](http://www.cac.gov.cn/2021-02/03/c_1613923423079314.html) (accessed on 25 October 2020).
- Wigfield, Allan, and Jacquelynne S. Eccles. 2000. Expectancy–Value theory of achievement motivation. *Contemporary Educational Psychology* 25: 68–81. [CrossRef] [PubMed]
- Ye, Minren, and K. A. Hagtvet. 1992. Measurement and analysis of achievement motivation. *Psychological Development and Education* 8: 14–16.
- Zhang, Yong, and Lirong Long. 2013. The impact of pay for performance on employees' creativity: Moderating effect of person-job fit and mediating effect of creative self-efficacy. *Acta Psychologica Sinica* 45: 363. [CrossRef]
- Zhang, Ze-Ju, Chuan-Lin Zhang, Xian-Geng Zhang, Xiang-Min Liu, Hui Zhang, Jing Wang, and Shuang Liu. 2015. Relationship between self-efficacy beliefs and achievement motivation in student nurses. *Chinese Nursing Research* 2: 67–70. [CrossRef]