

The Impact of Personality on Productivity and Job Performance

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Abstract: There is a growing body of research on the impact of personality on job performance. Additional research is required to examine the influence of individual variations and perceptions on workplace conduct and productivity. Productivity is a critical quantitative element in determining the success of any individual to excel in a competitive environment and must effectively utilise limited resources. Job performance is a qualitative indicator of an individual's level of success within the workspace. For this study, the research method used is a survey to analyse the impact of different personalities on job performance and productivity. The results illustrate introverts are more productive despite displaying lower job performance than extroverts. In general, the personality questionnaire's design may have a limited representation of introverts due to their quiet nature. Ambiverts may be more challenging to distinguish during analysis. The study indicates the necessity of a more comprehensive comprehension of personality traits, with a specific emphasis on demographics and the working environment. Providing peaceful environments and designated time slots can enhance introverted performance in the workplace. Extraverts can excel at extroverted tasks but may struggle to adapt to introverted settings. Ambiverts possess both qualities, making influential leaders possible. Furthermore, this paper advises including supplementary control factors to establish a causal relationship between personality and workplace capability.

Keywords: Introvert, extrovert, ambivert, productivity, job performance

1. Introduction

Extraverts concentrate primarily on people and things since they are oriented towards the outside world [1]. Extroverts prefer engaging in direct, in-person encounters, which leads to improved coordination and outcomes [2]. Introverts are primarily directed towards their inner world, which means they concentrate their energy on concepts, ideas, and internal experiences and draw their power from within themselves [1]. Introverts and extroverts have distinct communication styles when interacting with colleagues and employees, influencing their work performance. Introverts adhere to a systematic approach, whereas extroverts are prompt in addressing new issues. Introverts thrive in creative domains because of their capacity for introspection, self-reliance, and solitary work [3]. Numerous observers perceive introverts as being antisocial and uninterested in socializing, whereas extroverts tend to dislike being alone and are generally less productive compared to introverts [4].

Nevertheless, introverts may encounter difficulties in collaborative settings and professions requiring high extroversion levels, such as teaching and other occupations [3]. Ambiverts, similar to introverts and extroverts, exhibit tendencies that are extremely situationally and socially contingent [3]. Many people are ambiverts who are in between the two personalities and possess a balanced trait of both personalities. Ambiverts were distinguished from "psychoanalytic or psychological" types by their adaptability and flexibility [3]. Researchers claim that ambiverts are relatively balanced in quality, giving them a competitive advantage over the other two personalities. Researchers discovered that extroverts outperform in multiple aspects of their employment, such as team performance and the progression of individuals into future leadership positions [5]. The quality of being an introvert is considered to have a detrimental impact on job performance. In contrast, extraversion reveals a positive relationship with job performance. The theory behind these beneficial outcomes is that individuals with more extroversion exhibit greater motivation, experience more positive emotions, and possess enhanced interpersonal and leadership abilities [6]. Hence, it is worth investigating the application of personality in the workspace to allow employers to position different types of employees effectively.

This study aims to investigate the correlation between various personality traits, productivity, and job performance. The effects of the construct on the outcomes will be assessed by conducting surveys and analysing data. Firstly, a survey is distributed widely to examine an individual personality type, productivity and job performance. Items within surveys will be adopted from previous researchers to ensure the correct scale and relevant aspects are measured. Secondly, data cleansing to maximise validity and reliability. Thirdly, data analysis and Pearson correlation examine the relationship between variables.

2. Methodology

The study aims to produce data showing the relationship and work performance will guide development in business and psychology.

2.1. Variable Setting

The independent variable (IV) is the individual's personality (construct), while the dependent variable (DV) measures productivity and job performance. An irrelevant construct of judging (J) personality is added to compare the experimental validity against the relevant construct. When interacting with the outside world, a J person employs a Judging process, usually using thinking or the Judging process when interacting with the external environment [1]. When J individuals are more at ease and wish to plan their daily events rather than just experience.

2.1.1. Hypothesis 1: Productivity

The null hypothesis states that there is no relationship between introversion and productivity. The alternative hypothesis set out that there is a relationship between introversion and productivity.

2.1.2. Hypothesis 2: Job Performance

The null hypothesis asserts no relationship between extraversion and job performance. The alternative hypothesis asserts that there is a relationship between extraversion and job performance.

2.2. Measures

The survey comprised 25 items to assess an individual's personality, productivity and job performance. Firstly, the survey starts by asking consent and demographic questions. Secondly, a

range of questions adapted from the Myers-Briggs Type Indicator (MBTI) is used to analyse the extent of their introverted and extroverted level [1]. In addition, the j personality (irrelevant construct) questions are also adopted from MBTI. Most items are set on a 5-point Likert scale of (1) strongly disagree, (2) disagree, (3) neutral, (4) agree and (5) strongly agree apart from demographic questions. Thirdly, the survey's productivity and job performance component has been adopted from the Health and Work Performance Questionnaire (HPQ), broadly applied by researchers [7].

2.3. Data Collection

The data collection took two days, and the survey sample was conducted through opportunity sampling, which participants completed upon availability. The expeditious and effortless method of obtaining a sample confers a notable practical advantage. In addition, the survey was distributed over various Chinese social media platforms, and a sample size of 321 participants was collected.

2.4. Data Selection

Data cleansing was performed to address the presence of participants with significantly shorter or longer duration times than the norm, accompanied by low levels of engagement. Especially, those who finished rapidly and picked the same answer for everything have been excluded from the data since they may not have paid enough attention. Notably, participants with lower education and long duration time have been excluded because it can prevent participants who may have difficulties understanding questions. In addition, a small number of participants strongly agreed with both the positive and negative indicators of job performance, which is considered untenable. Consequently, this leaves the study with 289 participants.

2.5. Data Analysis

Coding has been conducted by assigning the value of 0 to male and 1 to female. Additionally, reverse scoring has been applied to the negative indicator to reverse 1 to 5, 2 to 4, 4 to 2, and 5 to 1. Subsequently, participants' mean scores for introversion and extraversion questions are taken as 0.01-1.66 for introverts, ambiverts as 1.67-3.33, and 3.34-5 for extroverts. Afterward, the Pearson correlation is conducted to measure the interrelation between different personality work productivity and job performance.

3. Results

3.1. Demographic

Table 1: Age group

Age group	Count	Percentage
18-24	67	23.18%
25-34	74	25.61%
35-44	52	17.99%
45-54	47	16.26%
55-64	49	16.96%
65+	0	0%
Total	289	

Based on Table 1, it can be depicted that the majority of the sample is from 25-34, followed by group 1. In fact, the sample size decreases afterward. In China, women retire at 55, while men retire at 60, even though some people still work beyond that age. Beyond 65 is 0, which could be a result of country-specific reasons.

Table 2: Educational background

Education level	Count	Percentage
Middle school	27	9.34%
High school graduate	83	28.72%
Junior college	61	21.11%
Undergraduate	100	34.60%
Master	17	5.88%
PhD	1	0.35%
Total	289	

Table 2 displays the educational backgrounds of the sample. Undergraduate (34.6%) is the predominant group, followed by high school graduates with 28.72%, junior college with 21.11%, and middle school at 9.34%. From the sample, master (5.88%) and PhD, with only 0.35% are the minority. Thus, the sample size does not have participants with an evenly spread educational level.

3.2. Personality

Table 3: Self-assessed personality

Personality	Count	Percentage (%)
Introvert	50	17.3%
Ambivert	160	55.36%
Extravert	79	27.34%
Total	289	

Table 4: Actual personality questionnaire results

Personality	Count	Percentage (%)
Introvert	8	2.77%
Ambivert	116	40.14%
Extravert	165	57.09%
Total	289	

According to Table 3 and table 4, individuals acknowledge that one self-differs strongly from the survey results. This may imply false self-assumption. Despite numerous people have admitted that they are ambiverts.

Table 5: Mean value, SDs, and the correlations among the variables (N= 289)

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. Gender	.50	.50									
2. Age	37.67	13.65	-.02								
3. Education	3.0	1.12	.10	-.04							
4. Introvert	1.47	.15	.33	.26	.16	(.89)					
5. Ambivert	2.56	.53	-.02	-.01	-.13	-.09	(.89)				
6. Extravert	3.95	.30	.08	.03	-.10	.22	.10	(.89)			
7. Job performance	3.22	.88	.10	.18**	-.02	-.02	.49**	.74**	(.64)		
8. Productivity	3.11	.55	-.03	.004	-.06	0.30	.21*	-.11	.02	(0.3)	
9. J Personality	3.39	.92	.04	.13*	-.08	.75	.77**	.14	.66**	.10	(.73)

Note: Cronbach's alphas for each scale are listed in brackets on the diagonal. * $p < .05$, ** $p < .01$

As shown in Table 5, individuals' productivity and performance do not vary with gender, meaning gender does not have an effect. In general, an individual's age and job performance ($r=.18$, $p < .05$) exhibit a weak positive correlation. Surprisingly, education demonstrates a significantly negative relationship with all the factors that can be neglected. Additionally, it can be manifested that the introverted group has a weak positive correlation with productivity ($r=.30$) but a deficient job performance ($r=-.02$) relationship that can be ignored. There is a strong positive correlation between extraversion and job performance ($r = .74$, $p < .01$). Despite, extravert exhibits a weak negative correlation with productivity ($r=.02$). In addition, it is worth noting that ambiverts and job performance exhibits a moderate positive relationship of ($r = .49$, $p < .01$). Based on table 5, the J personality still demonstrate a moderate correlation with job performance ($r=.66$, $p < .01$). J personality also has a positive correlation with introverts ($r=.75$) and ambiverts ($r = .77$, $p < .01$).

3.3. Comparison of Hypothesis and Results

Introversion and productivity ($r=.30$) demonstrate a weak positive relationship, meaning the alternative hypothesis 1 should be accepted instead of the null hypothesis. Despite this, it is worth noting that ambivert ($r=.21$, $p < .05$) has a weak positive correlation.

Extraversion and job performance ($r = .74$, $p < .01$) indicate a statistically significant result, meaning the observed results provide enough indication to refuse the null hypothesis 2 and accept the alternative hypothesis 2.

3.4. Internal Consistency Reliabilities

The Cronbach's alpha index for the 10 items measuring the construct is 0.89 and will decrease to 0.87 if any item is deleted. As a result, there is a strong level of reliability. Despite this, the internal consistency reliability is lower for the outcomes, with remarkable productivity at only 0.3.

3.5. Validities

The personality type construct and the distinct construct have a strong positive correlation coefficient, suggesting that they are not distinct. Thus, this indicates poor discriminate validity.

A more substantial correlation coefficient between the construct and outcome implies a more robust relationship between the measure and the external criterion, proving there is reasonable criterion validity.

4. Discussion

4.1. Analysis of Reasons Behind Results

Generally speaking, there is a slight positive association ($r=.18$, $p < .05$) between an individual's age and work performance, which may be attributed to gain of work experience and personal development. The limited presence of genuine introverts among the participants can be ascribed to the design of the personality questionnaire, as some individuals may perceive that their responses are not entirely anonymous from the researcher, thereby discouraging them from providing extreme answers. These response options would have impacted the introvert score. According to researchers, introverts' quiet nature causes them to be less likely to offer extreme responses; therefore, more introverts potentially were not expressing their valid opinions. [8]. A significant number of ambiverts obtained scores that were close to the threshold for introversion. Therefore, it is plausible that the sample did not have a shortage of introverts but rather that they were more challenging to distinguish during the analysis.

The study implies that providing peaceful environments and designated time slots with minimal disruptions could be advantageous for introverted individuals to enhance their performance in the workplace [9]. Extraverts consistently positively impact individuals' self-efficacy or trust in their ability to successfully complete duties and overcome obstacles [10]. These attributes can improve their capacity to communicate and cooperate, enhancing their self-confidence in a highly effective manner. Although, extraverts who worked from home due to COVID-19 may have had lower productivity, engagement, job satisfaction, and burnout [9]. Introverts can potentially excel at introverted tasks, whereas extroverts are proficient at being extroverted but may struggle to adapt to introverted settings. Subsequently, the result can be explained by introverts who may favour picking a working environment that provides some flexibility, such as work away from the office that could alternatively boost their productivity.

Although introverts' job performance is lower, it could result from environmental issues. This is because numerous work sectors require intensive communication with peers, which extraverts exceed introverts. Extraversion's motivational, emotional, interpersonal connection and performance benefits provide a succinct explanation of its relationships and a fresh perspective for comprehending its impact in the workplace [11].

Researchers stated that participants are convinced that influential leaders could be any personality but that introversion must be acquired to amend or present some positive extroversion traits to thrive in the workplace [8]. This brings us to the concept of ambivert, who possesses somewhat of both qualities. Ambiverts demonstrate exceptional performance in situations requiring close collaboration, but they can also attain outstanding results independently. They find both circumstances stimulating and exhibit a degree of flexibility that empowers them to attain noteworthy advancements in the workspace.

Individuals with J personality tend to like to produce a schedule and work accordingly, potentially resulting in better job performance. However, it is worth mentioning confounding variables- a third variable that can affect IV and DV, leading to a misleading correlation. For instance, individuals' workability and leadership style may play a role in influencing the correlation between their degree of J personality and job performance.

4.2. Limitations

There is a high discriminate validity regarding limitations, and J's personality manifests a moderate correlation with one of the most evident outcomes. As a result, this means the experimental validity is left to some doubts.

Furthermore, the sample size has some demographic issues, such as the uneven distribution of age and education level. Particularly, master and above only occupy less than 7% of the whole sample.

Moreover, the internal consistency is extremely low for productivity, meaning some of the items adopted do not manifest a strong correlation with each other. Consequently, this can negatively impact the reliability of the result.

Nevertheless, work engagement, job satisfaction, and individual capability can influence job performance and productivity. Previous research has demonstrated that work engagement is essential for developing healthy organizations, as it is closely connected to job performance [12]. Thus, the experiment lacks additional controlling variables.

Moreover, the primary research method, the survey, evaluated personality through self-report items, which are inclined to self-distortion since individuals are prone to make themselves sound better or speak modestly due to cultural reasons. Self-reported questionnaires raise concerns about these measures' reliability and accuracy in predicting the relationship with the outcomes [13]. A vast majority of the participants favored the neutral (3) option, which is also implied by the value productivity ($M=3.11$) and job performance ($M=3.22$). As a result, this may influence the results to a certain extent as it may not be a faithful representation.

The correlation between personality traits and performance differs significantly among various occupational categories, indicating a requirement for more detailed research considering the specific context of different professions [14].

4.3. Suggestions

Another irrelevant construct could have been adopted instead of J personality to reduce the related issue of high correlation with the construct. Demographic phenomena can be resolved by including a broader population to produce a more factual generalisation of different personalities.

Low internal consistency for productivity can be resolved by removing items and adding additional elements to examine the factor holistically. A study discovered that flexible office hours and work away from the office can positively influence employee satisfaction and productivity; hence, productivity being not exceptionally high can be environmentally associated and work satisfaction is the reason behind an individual's motivation towards work. The removal of items that have the most significant impact on internal consistency reliability decreases reliability as the error term in the denominator increases. Equally, the experimental validity can be improved by adding additional control factors to ensure that the independent and dependent variables have a causal relationship to an extent. Applying control variables can improve the study's internal validity by mitigating the influence of confounding variables and alternative unrelated components.

A solution for reducing bias is to make their superior assess their productivity level and job performance and then take the mean of self-report and leader assessment for a more reliable result.

For future studies, adding an occupational group is necessary in the questionnaire to allow comparison and control groups in the industry sector.

5. Conclusion

No demographic parameters correlate with the outcomes except for age and work performance, which have an extremely weak correlation. This perhaps is due to personal experience and growth. Productivity and poor work performance are slightly positive for introverts. The personality test did

not elicit strong agree or disagree responses, which would have affected introvert scores. Introverts are quieter and less likely to give extreme answers; consequently, more may have been concealed. Ambiverts had several introversion ratings around the threshold. Therefore, it is possible that the sample included more introverts, but it was more complicated to distinguish during the analysis. Extraversion substantially promotes job performance. Extraverted people always affect self-efficacy or confidence in their capacity to accomplish their objectives. Subsequently, these traits may enhance collaboration and communication, elevating self-confidence and leading to better job performance. However, ambiverts and J personalities also have a moderate positive link. Therefore, both null hypotheses have been rejected, and the alternative hypothesis has been accepted.

The findings help explain how personality affects workplace behaviour. Furthermore, it illustrates the rationale of results and the impact of environment, work satisfaction, and engagement on productivity and job performance. This study underlines why each personality thrives in its ideal environment, maximising potential. Potentially, this paper can make employers understand more about how employees of different personalities function the best.

The study is subject to some limitations, such as a high level of discriminating validity, a modest connection between J personality and results, and poor internal consistency for productivity. The survey approach is susceptible to self-bias and can be resolved by a broader sample, which might enhance generalizability. To address these problems, it may be necessary to eliminate elements that substantially affect dependability and include extra control measures. In the future, enhancing dependability can be achieved by mitigating bias by evaluating productivity and job performance using a double survey for superior-to-rate and self-rated employees.

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