

Article

Social Media Use and Job Performance in the Workplace: The Effects of Facebook and KakaoTalk Use on Job Performance in South Korea

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Abstract: The use of social media, such as social networking sites and instant messaging, in everyday life continues to spread, along with social media use in the workplace. This study examined how using social media like Facebook (social networking sites) and KakaoTalk (instant messaging) at work affects individual job performance. It also analyzed whether social media use has different effects on individual job performance depending on the characteristics of the given task. The results demonstrated that both Facebook and KakaoTalk had linearly positive effects on individual job performance. Moreover, task equivocality had a positive moderating effect on the relationship between KakaoTalk use and job performance. The results may have significant implications for firms reviewing their policies on employees' social media use. Since using social media such as Facebook and KakaoTalk in the workplace improves job performance, firms may consider encouraging employees toward this practice. In particular, they may consider supporting those employees who perform tasks with high task equivocality in making use of instant messaging platforms.

Keywords: social media; Facebook; KakaoTalk; job performance; task characteristics

1. Introduction

Social media has countless users worldwide, and the number is constantly growing [1–4]. Monthly active Facebook users exceeded 2.5 billion worldwide as of the fourth quarter of 2019 [5]. In South Korea, the number of users who accessed Facebook at least once per month reached 18 million as of the first quarter of 2019 [6]. This increase in the number of social media users leads to an inevitable increase in the number of office workers using social media in the workplace [7–10].

A number of studies have been conducted on how increased social media use affects individual job performance. Some studies show that it enhances workers' job performance [3,7,11–14], while others claim that it impairs their job performance [8,15–18]. However, very few empirical studies have been conducted on how social media use by office workers affects individual job performance [3,7,17].

This study aims to fill this gap by analyzing the social media use of office workers in South Korea and its effects on individual job performance, and highlighting how such effects differ depending on the characteristics of the given task: task equivocality and task interdependence [19–21].

Social media is varied; the definition refers to social networking sites (SNSs) such as Facebook and Twitter, instant messaging services such as KakaoTalk and WhatsApp, blogs such as WordPress.com and Blog.com, and information-sharing sites such as YouTube [22,23]. However, Facebook and KakaoTalk were selected as the subjects of this study. Facebook is a typical SNS and has the largest number of users worldwide [24,25]; it is also very popular in South Korea [2]. KakaoTalk is the most widely used instant messaging service in the country, with as many as 41 million users, which amount to more

than 80% of the total population of South Korea [26–28]. Among the various types of social media, instant messaging is perceived as a social media service competing with SNS [22]. Thus, significant implications may accrue from the comparison between the effects of KakaoTalk use on job performance and those of Facebook use.

Therefore, this study examines the effect of using Facebook (SNS) and KakaoTalk (instant messaging) in the workplace on individual job performance and the moderating effects of task equivocality and task interdependence on such effects. There have been studies on the effect of using SNS in the workplace on job performance [16] and the effect of using instant messaging in the workplace on job performance [29,30]. However, no study has explored the moderating effects of task characteristics on these effects.

From an academic perspective, this study may help determine the cause of any conflicting results concerning the effects of social media use in the workplace on job performance. If social media is not suitable for a task's characteristics, using social media is a waste of time, and it impairs job performance. However, if social media meets the needs of a task, using it improves job performance [19]. From a practical perspective, there may be implications for firms looking to implement policies regarding their employees' social media use—if it enhances job performance, firms may consider establishing policies that encourage it. Moreover, if the effect of social media use on job performance is higher for employees performing tasks with specific characteristics, firms may encourage them to use social media.

The remainder of the study proceeds as follows. Section 2 reviews the literature related to social media, job performance, and task characteristics, and it introduces the hypotheses. Section 3 describes the research method, and Section 4 presents the results of the data analysis. Section 5 discusses the research results, and Section 6 explains the implications of the results. Finally, Section 7 presents the limitations of the study and future research directions.

2. Literature Review and Hypotheses

2.1. Social Media Use and Job Performance

Job performance can be defined as the degree to which one meets the formal requirements of a job and adequately completes assigned duties [31,32]. In general, if a firm implements an information system and the employees use it for their work, it improves their job performance [29,33]. According to the computer-mediated communications interactivity model [34] and the media synchronicity theory [35], using computer-mediated communications at work improves communication efficiency as well as job performance. This model is based on the idea that using computer-mediated communications for work improves job performance by enhancing interactivity and communication quality among co-workers [34]. According to the media synchronicity theory, work-related communication is composed of two primary processes: convergence and conveyance; media with high synchronicity help improve performance in the former, while media with low synchronicity help improve performance in the latter [35]. Synchronicity of media refers to the degree to which given media allow for synchronous communication with quick feedback and no delay [36,37]. However, these studies merely analyzed whether using computer-mediated communications for work helps improve job performance.

Social media, which are considered a form of computer-mediated communication, are used by office workers both for work purposes [3] and for personal use [14,17]. This study measured social media use in the workplace as an independent variable and did not distinguish whether social media use was for work or personal purposes. According to previous studies, while social media use for work only positively affected job performance [3,7], daily social media use for interchangeable work and personal purposes positively [12,14] or negatively [16,17] affected job performance. In addition, managers of companies are concerned that social media use reduces the time that employees spend on their work-related tasks and become distracted during their work time [15]. Therefore, additional studies are needed on how office workers' social media use in the workplace affects their individual

job performance. As mentioned above, this study analyzes the effects of Facebook and KakaoTalk in these respects.

One study classified social sustainability into three categories: development, bridge, and maintenance social sustainability [38]. Development social sustainability claims that access to healthy food, education, equity, and justice will help countries and societies develop [39]. Bridge social sustainability “explores ways of promoting eco-friendly behavior or stronger environmental ethics” [38]. Maintenance social sustainability is related to the “process for creating sustainable, successful places that promote well-being by understanding what people need from places in which they live and work” [40]. It deals with individuals’ well-being, social networks, and pleasant work and living spaces [38,39]. Work and living spaces as well as social networks may be developed and maintained not only in physical spaces but also in virtual spaces such as social media [39]. Today, virtual spaces such as social media are increasingly becoming important workspaces for individuals [14]. Therefore, examining the effect of using social media in the workplace on individual job performance is related to well-being in workspaces and social networks, and this may provide important implications for enhancing maintenance social sustainability.

2.1.1. Facebook Use and Job Performance

Of all the research conducted on the effects of social media use on job performance [3,7,11–14, 16–18,41–43], the following three focused on the effect of SNS use on job performance: [13,14,16]. Among them, only [16] analyzed the effect of SNS use in the workplace specifically; the other two either did not focus on the place where workers used SNS [14] or dealt with SNS use for work [13].

Reference [16] argued that SNS use in the workplace impairs job performance as it causes distraction from work. However, in line with concurrent task management normative theory, reference [44] stated that those who perform multiple tasks at once prioritize them in order of importance, urgency, and status. This theory claims that, when office workers engage in work and distraction simultaneously, both become tasks and are thus performed in their order of priority [44]. Reference [45] also argued that the point of responding to external stimuli in the workplace is adjusted to prevent a deterioration in job performance due to work interruptions from such stimuli. They claimed that office workers control this point of work interruption in order to efficiently perform their work, in addition to other activities that are unrelated to work.

These studies can also be applied to cases where office workers are performing their tasks in the workplace while simultaneously using SNS. When dealing with a large workload or performing an important task—that is, if they must fully concentrate on their work—they are expected to put off using SNS until their work has been completed. In fact, if SNS use results in them missing a deadline, or if it distracts them from important or urgent work and causes mistakes, they will be reprimanded by their supervisor or co-workers [46]. As such, if the point of using SNS is adjusted according to the importance, urgency, and status of tasks by prioritizing work and SNS use, workers cannot be distracted from their work even if their SNS use increases.

Meanwhile, some studies have claimed that SNS use positively affects job performance [13,14], as it improves organizational commitment [14,47] and helps build social capital [48,49]. Social capital refers to the benefits that individuals receive from their social relationships and interactions through resources, such as emotional support, exposure to diverse ideas, and access to non-redundant information [48]. References [50,51] classified social capital into bridging and bonding social capital. Bridging social capital is related to weak ties, which are formed by relationships with casual acquaintances and loose connections between individuals [51]. On the contrary, bonding social capital can be obtained by strongly tied individuals, such as family and close friends [51]. Social capital allows workers to access resources and information from social networks [52], thus enabling them to engage in innovative behaviors [53]. In addition, social capital and social support formed through SNS can improve the creativity of workers [54]. In conclusion, a positive linear relationship between SNS use in the workplace and individual job performance can be expected, leading to the following hypothesis:

Hypothesis 1 (H1). *Facebook use in the workplace has a positive effect on individual job performance.*

2.1.2. KaKaoTalk Use and Job Performance

Regarding the effects of using instant messaging, such as KakaoTalk, on job performance, some studies have claimed positive results [29,55,56], while others have claimed negative effects [57–60]. However, it is difficult to find empirical studies proving that instant messaging use in the workplace hinders job performance.

Empirical studies on the effects of instant messaging on job performance include [29,30,56,61]. Reference [30] claimed that using instant messaging while performing tasks does not significantly affect task accuracy or completion time. Reference [61] also argued that, despite the concerns noted in previous studies, there was no statistically significant difference in the task completion time or task performance level between a group using instant messaging and a group not using it. Reference [29] stated that, while instant messaging distracts from work and causes work interruptions, these interruptions do not significantly affect job performance. Instead, they argued, using instant messaging at work improves job performance by enhancing interactivity among colleagues, communication quality, and mutual trust. Reference [56] also claimed that using instant messaging increases knowledge-sharing among team members, thereby improving job performance.

The results of the study conducted by [62] may explain why using instant messaging in the workplace does not impair job performance. They analyzed the conversations held by office workers via instant messaging in the workplace and discovered that 61.8% of those conversations were conducted to discuss or handle work-related issues. Moreover, personal conversations (13.0%) and greetings (5.4%) accounted for a relatively low rate of interaction. In other words, when office workers use instant messaging in the workplace, their conversations are mainly work-related. As mentioned above, according to the computer-mediated communications interactivity model [34] and media synchronicity theory [35], using computer-mediated communications for work-related conversations can improve communication efficiency as well as job performance. Therefore, it is expected that using instant messaging in the workplace will only improve job performance, thus leading to the following hypothesis:

Hypothesis 2 (H2). *KakaoTalk use in the workplace has a positive effect on individual job performance.*

2.2. Moderating Effects of Task Characteristics

In general, the effects of media use on performing certain tasks are known to vary according to the characteristics of the task itself [7]. Reference [19] proposed the task-technology fit model, in which the fit between task characteristics and technology characteristics enhances individual performance. This model explains that the more suitable the technology (information system) is for the task, the more users tend to use it, thus helping improve job performance [63,64]. Therefore, the effects of information systems on job performance can vary according to the task characteristics. Reference [65] suggested that the task-technology fit model can be applied to social media such as SNSs.

Task characteristics have been variously categorized in previous studies [19,66–68]. However, many have classified task characteristics into equivocality and interdependence [13,19–21]. The present study also adopts this classification and determines how the effects of social media use on job performance vary according to these characteristics.

2.2.1. Task Equivocality

Task equivocality refers to the degree to which there are multiple and conflicting interpretations of situations related to carrying out given tasks [69–71]. Tasks with high equivocality do not have

a well-defined scope or procedures, their goals are unclear, and their problem-solving methods are diverse [71].

Media richness theory suggests that, with higher task equivocality, richer media use is more suitable for increasing the performance of a task, whereas with lower task equivocality, leaner media use is more suitable for increasing the performance of a task [72,73]. The term *rich media* refers to media that allow for quick feedback in the communication process, allow many cues, such as voice inflections, body gestures, and graphic symbols to be handled, and facilitate communication focused on individuals [69,74,75]. In general, the richest form of media is face-to-face communications, followed by telephone calls, addressed written documents, and unaddressed written documents [67,69,75].

Rich media, such as face-to-face communications and telephone calls, may help workers share their views when they have different interpretations of complicated situations related to their tasks, and to overcome the different interpretations they have regarding information [72]. On the other hand, media that are less rich, such as documents, are not fit for members to discuss and resolve ambiguous issues, but are useful for sharing precise information and dealing with procedures that they understand well [72].

In general, among the various types of social media, instant messaging platforms such as KakaoTalk are known to be richer than SNSs like Facebook or Twitter and other computer-mediated communications such as blogs and emails [67,76,77]. Therefore, regarding the effect of Facebook use on job performance, task equivocality is expected to have a negative moderating effect. However, regarding the effect of KakaoTalk use on job performance, it is expected to have a positive moderating effect. This leads to the following hypotheses:

Hypothesis 3 (H3). *Regarding the effect of Facebook use in the workplace on job performance, task equivocality has a negative moderating effect.*

Hypothesis 4 (H4). *Regarding the effect of KakaoTalk use in the workplace on job performance, task equivocality has a positive moderating effect.*

2.2.2. Task Interdependence

Task interdependence refers to the degree of influence that some tasks have on carrying out other tasks [78–80]. Performing a task with high interdependence requires a great deal of cooperation and coordination with other tasks.

In their study, [37] claimed that the team using a communication method with high synchronicity to carry out their tasks performed better in tasks with high interdependence, while the team using the communication method with low synchronicity performed better in tasks with low interdependence. This is because, for the former team, using media that allowed immediate communication was more useful for prompt cooperation and coordination among co-workers.

Using media with high synchronicity will help in tasks with high interdependence, not only for work-related communication, but also for daily communication with colleagues for social purposes. Since it is necessary to cooperate with colleagues in order to carry out tasks with high interdependence [81], it is important to build social relationships and mutual trust. Media with high synchronicity are useful for building social relationships and trust among colleagues through daily communication [29]. Therefore, office workers carrying out tasks with high interdependence may perform better when using media with high synchronicity than with low synchronicity.

In general, it is known that Facebook is less synchronous than an instant messaging platform, like KakaoTalk or telephone calls [35,67,75]. Therefore, regarding the effect of Facebook use in the workplace on job performance, task interdependence is expected to have a negative moderating effect [13]. However, regarding the effect of KakaoTalk use on job performance, it is expected to have a positive moderating effect. This leads to the following hypotheses:

Hypothesis 5 (H5). *Regarding the effect of Facebook use in the workplace on job performance, task interdependence has a negative moderating effect.*

Hypothesis 6 (H6). *Regarding the effect of KakaoTalk use in the workplace on job performance, task interdependence has a positive moderating effect.*

3. Research Method

3.1. Data Collection

We conducted a survey to test the hypotheses in this study. It was created by a specialized survey company in March 2018, targeting office workers in South Korea who used Facebook or KakaoTalk. The distribution of the survey participants was not limited to workers within a specific industry or company, so that the variance of the measured values for task equivocality and task interdependence would be sufficiently large. The survey website link was sent to the panels of the survey company via email, with the instruction that only email recipients who were both office workers and used Facebook or KakaoTalk should respond. A total of 3873 panels opened the emails and followed the link to view the survey. Of the total participants, 658 (17%) responded, but only 289 (7.5%) office workers who use Facebook or KakaoTalk participated in the survey. The responses of a total of 283 participants were used in the final analysis, excluding six participants who marked the same number for all items (suggesting a lack of good faith) or did not respond to many of the items. The maximum margin of error allowed was 5.83% given a level of confidence of 95%.

3.2. Measurement

Job performance, the dependent variable, was measured using six items also employed by [3] and [82] for measuring individual job performance; these included “I always perform better than an acceptable level”, “I often put in extra effort in my work”, and “The quality of my work is excellent”. The survey respondents were asked to report their subjective perception of their own job performance on a five-point Likert scale (1: Strongly disagree, 3: Average, 5: Strongly agree).

We measured the degree of Facebook and KakaoTalk use in the workplace by the item “I use Facebook (KakaoTalk) often in the workplace” [3,83], which was rated on a five-point Likert scale (1: Strongly disagree, 3: Average, 5: Strongly agree).

Among task characteristics, task equivocality was measured by three items developed by [70]. Task interdependence was measured by five items developed by [84]. Each item was also rated on a five-point Likert scale (1: Strongly disagree, 3: Average, 5: Strongly agree).

The dependent variable “job performance” and the moderators were measured by the self-reports of survey respondents. Self-reporting is the most common and simplest method in fields such as the social sciences, and it seeks to collect data regarding the perception, intention, and attitude of the subject of observation [85]. Nonetheless, this method has the potential limitation of common method bias [85]. Thus, this study conducted a Harman’s single-factor test, which is conventionally used to determine whether the issue of common method bias is serious [86–90]. In addition, this study sought to avoid the possibility of common method bias by using a mix of positively and negatively worded items, ensuring the respondents’ anonymity, hiding the name of each variable, and requiring respondents to answer the questionnaire honestly [87,91].

The control variables used in this study were gender, age, education, work experience, full-time/part-time, whether the company permits social media use, and the existence of internal (enterprise) social media channels. These variables were also used by [14] as control variables that might affect the dependent variable “individual job performance”. Gender was measured as 1 for male and 0 for female, and respondents were asked to provide their age and years of work experience. However, to ensure the normality of the variables, this study used the log of age and work experience.

Education was divided into five categories, from high school graduate to doctorate (1: High school graduate, 2: Two-year college graduate, 3: Four-year college graduate, 4: Master's, 5: Doctorate). We also measured whether the respondents were full-time (1) or part-time (0), as well as whether their company permitted social media use at work (1: Permitted, 0: Not permitted) and whether there were internal social media channels (1: Yes, 0: No).

3.3. Survey Participants

There were 150 male (53.0%) and 133 female (47.0%) respondents (Table 1), most of whom were aged 30–39 (101, 35.7%) and were four-year college graduates (187, 66.1%). Regarding work experience, most had less than five years of experience (90, 31.8%), followed by 10–19 years of experience (87, 30.7%). Most of the respondents were full-time workers (277, 97.9%), and 248 (87.6%) worked in private enterprises, while 35 (12.4%) worked as public officials or in public enterprises. There were 251 (88.7%) Facebook users and 275 (97.2%) KakaoTalk users, while 243 (85.7%) used both. According to data published by KOSTAT (Statistics Korea), as of August 2018, the proportion of male office workers in South Korea was 50.9% (2.421 million), and that of female office workers was 49.1% (2.333 million) [92]. The proportions of full-time and part-time office workers were 94.7% (4.502 million) and 5.3% (0.252 million), respectively. As such, it may be concluded that the research sample for this study was representative of the Korean office worker population.

Table 1. Descriptive statistics of survey participants ($N = 283$).

Division		N	Ratio (%)
Gender	Male	150	53.0
	Female	133	47.0
Age	Aged 20–29	80	28.3
	Aged 30–39	101	35.7
	Aged 40–49	70	24.7
	Aged 50–59	32	11.3
	High school graduate	24	8.5
Education	2-year college graduate	42	14.8
	4-year college graduate	187	66.1
	Master's	28	9.9
	Doctorate	2	0.7
Work experience	Less than 5 years	90	31.8
	5–9 years	65	23.0
	10–19 years	87	30.7
	20–29 years	30	10.6
	30–39 years	10	3.5
Full-time/part-time	Full-time	277	97.9
	Part-time	6	2.1
Private enterprise/public enterprise	Private enterprise	248	87.6
	Public official/public enterprise	35	12.4
Social media permission status of the company	Permitted	243	85.9
	Not permitted	40	14.1
Internal social media	Yes	103	36.4
	No	180	63.6
Social media	Facebook	251	88.7
	KakaoTalk	275	97.2
	Facebook and KakaoTalk	243	85.7

Among the control variables, age and work experience had a correlation coefficient of 0.847 ($p < 0.01$). Therefore, to prevent multicollinearity among variables, this study included age, which is generally used as a demographic variable in social science research, while excluding work experience from the analysis.

4. Results

4.1. Analysis Strategy

This study employed structural equation modeling (SEM) using partial least squares (PLS) to analyze the proposed hypotheses. PLS has been widely used in theory testing and confirmation [88]; it is also an appropriate approach for verifying relationships between variables and thus is useful in suggesting propositions for later testing [88,93]. PLS is a well-designed statistical analytic software for evaluating complicated predictive models, including the analysis of both the measurement and structural models [87,94,95]. PLS relies on a smaller sample size for validating a model than do other SEM techniques [88,94,96]. Since the collected sample in this study was relatively small, we used PLS to test the research model and the SMART PLS 3.0 software to analyze data. PLS analysis was conducted by categorizing the subjects into Facebook users ($N = 251$), KakaoTalk users ($N = 275$), and users of both ($N = 243$).

4.2. Measurement Model

We conducted confirmatory factor analysis using SMART PLS 3.0. In the first analysis targeting Facebook users, the factor loading values of most items were greater than 0.7, except for INTD3 and JPF5, which had a value of 0.475 and 0.676. These items were deleted from the model, and confirmatory factor analysis was conducted again. The results then showed that factor loading values for all items were greater than 0.7 [97,98]. In the second analysis targeting KakaoTalk users, all items except for INTD3 (0.423) and JPF5 (0.695) met the criterion of factor loading of 0.7 or higher. In the third analysis, targeting users of both, the values of most items were greater than 0.7, except for INTD3 (0.443) and JPF5 (0.682). Thus, these items also were deleted from the model.

Meanwhile, to determine whether the self-report method presented an issue of common method bias, we conducted a Harman's single-factor test using SPSS 10.0 software. As a result, a total of seven factors with an eigenvalue of 1 or higher were extracted, of which a general factor explained only 20.3% of total variance, confirming that the common method bias was not serious [86–90].

The evaluation of the measurement model consisted of two main aspects, including tests of convergent validity and discriminant validity [87,88,90,99]. Convergent validity was established by examining Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) [86,88]. In general, the Cronbach's alpha and the CR for each construct had to be greater than 0.7, and the AVE for each construct had to exceed 0.5 [100,101]. In the first analysis targeting Facebook users, the Cronbach's alpha for all constructs exceeded 0.7, ranging from 0.705 to 0.838. The CR for all constructs was also greater than 0.7, ranging from 0.831 to 0.885. Additionally, the AVE for each construct was greater than 0.5, ranging from 0.577 to 0.621. In the second analysis targeting KakaoTalk users, the Cronbach's alpha and CR exceeded 0.7 for all constructs, ranging from 0.713 to 0.858 and 0.839 to 0.894, respectively. The AVE for each construct was also greater than 0.5, ranging from 0.574 to 0.635. In the third analysis targeting users of both, the Cronbach's alpha, CR, and AVE exceeded the threshold. Table 2 represents the relevant values of the convergent validity of the measurement model in the third analysis targeting users of both. Therefore, convergent validity was established.

The discriminant validity of the measurement model was evaluated by two criteria: the square root of the AVE and cross-loading [93,96]. The square root of the AVE for each construct must exceed the correlations between the construct and all other constructs [93,96]. In addition, all the item loadings on their construct should be greater than their loadings on the other constructs [93,96]. In the first, second, and third analyses, the square root of the AVE for each construct exceeded the correlations between that construct and the other constructs. Table 3 represents the square roots of the AVE for all latent constructs in the third analysis targeting users of both. The loadings of items of each construct were higher than the loadings of items of other constructs in all three analyses. Table 4 represents cross-loadings of all items of latent constructs in the third analysis. Therefore, discriminant validity was established.

Table 2. Measurement items and convergent validity of the model (users of both Facebook and KakaoTalk, $N = 243$).

Construct	Items	Factor Loading	Cronbach's Alpha	CR	AVE
	Job performance		0.837	0.885	0.606
JPF1	I always perform better than the acceptable level.	0.824			
JPF2	I often perform better than can be expected from me.	0.824			
JPF3	I often put extra effort in my work.	0.760			
JPF4	I intentionally put a great deal of effort in carrying out my job.	0.749			
JPF6	The quality of my work is excellent.	0.730			
	Task equivocality		0.704	0.831	0.621
EQV1	Different people may have different opinions about the best solution to my tasks.	0.779			
EQV2	More than one reasonable solution exists for the problems faced in my tasks.	0.792			
EQV3	The rules and criteria for solving the problems in my tasks are clear.	0.792			
	Task interdependence		0.758	0.842	0.572
INTD1	I have to obtain information and advice from my colleagues in order to complete my tasks.	0.752			
INTD2	I depend on my colleagues for the completion of my tasks.	0.716			
INTD4	I have to work closely with my colleagues to do my work properly.	0.814			
INTD5	In order to complete their work, my colleagues have to obtain information and advice from me.	0.739			

Table 3. Discriminant validity of the model (users of both Facebook and KakaoTalk, $N = 243$).

Construct	Mean (SD)	JPF	EQV	INTD
JPF	3.533(0.513)	0.779		
EQV	3.567(0.645)	0.433	0.788	
INTD	3.386(0.672)	0.398	0.459	0.756

Table 4. Cross-loadings of each construct (users of both Facebook and KakaoTalk, $N = 243$).

Indicators	JPF	EQV	INTD
JPF1	0.824	0.338	0.295
JPF2	0.824	0.295	0.289
JPF3	0.760	0.341	0.386
JPF4	0.749	0.339	0.313
JPF6	0.730	0.367	0.259
EQV1	0.331	0.779	0.333
EQV2	0.343	0.792	0.357
EQV3	0.349	0.792	0.394
INTD1	0.281	0.352	0.752
INTD2	0.191	0.287	0.716
INTD4	0.317	0.419	0.814
INTD5	0.363	0.317	0.739

4.3. Structural Model (Hypothesis Testing)

A 1000 resamples bootstrapping method was used to compute the t-statistics and to test the hypotheses [102]. To test the moderating effects of task equivocality and task interdependence, we used the moderating effect option in the SMART PLS 3.0 software.

To test for possible issues of multicollinearity, we examined the variance inflation factor (VIF). The VIFs were lower than 2.3 in all regression analysis models; these values were less than the critical value of 5 suggested by [98]. Thereby, multicollinearity was not serious [103].

We also conducted PLS regression analysis by categorizing the subjects into Facebook users ($N = 251$), KakaoTalk users ($N = 275$), and users of both ($N = 243$). The first PLS regression analysis targeting Facebook users verified that there was a positive relationship between Facebook use in the workplace and job performance, as well as moderating effects of task equivocality and task interdependence on this relationship. The path coefficient of Facebook use in the workplace turned out to be positive ($\beta = 0.126, p < 0.05$). However, for the moderating effect analysis, the two interaction terms (task equivocality $\times$ Facebook use in the workplace and task interdependence $\times$ Facebook use in the workplace) were not statistically significant. Therefore, H1 was supported, while H3 and H5 were not supported. These observations are presented in Table 5.

Table 5. The effects of Facebook use and KakaoTalk use in the workplace on job performance and the moderating effect of task characteristics.

Hyp.	Relationship	β	SE	<i>t</i> -Value	Decision
Facebook users ($N = 251$)					
H1	Facebook use $\rightarrow$ Job performance	0.126	0.057	2.219 *	Supported
H3	Task equivocality $\times$ Facebook use $\rightarrow$ Job performance	0.106	0.065	1.635	Not supported
H5	Task interdependence $\times$ Facebook use $\rightarrow$ Job performance	−0.018	0.066	0.267	Not supported
KakaoTalk users ($N = 275$)					
H2	KakaoTalk use $\rightarrow$ Job performance	0.187	0.058	3.245 **	Supported
H4	Task equivocality $\times$ KakaoTalk use $\rightarrow$ Job performance	0.245	0.054	4.522 ***	Supported
H6	Task interdependence $\times$ KakaoTalk use $\rightarrow$ Job performance	−0.051	0.057	0.887	Not supported
Users of both ($N = 243$)					
H1	Facebook use $\rightarrow$ Job performance	0.111	0.056	1.999 *	Supported
H2	KakaoTalk use $\rightarrow$ Job performance	0.120	0.064	2.177 *	Supported
H3	Task equivocality $\times$ Facebook use $\rightarrow$ Job performance	0.049	0.062	0.789	Not supported
H4	Task equivocality $\times$ KakaoTalk use $\rightarrow$ Job performance	0.160	0.055	2.934 **	Supported
H5	Task interdependence $\times$ Facebook use $\rightarrow$ Job performance	0.018	0.070	0.263	Not supported
H6	Task interdependence $\times$ KakaoTalk use $\rightarrow$ Job performance	−0.020	0.056	0.355	Not supported

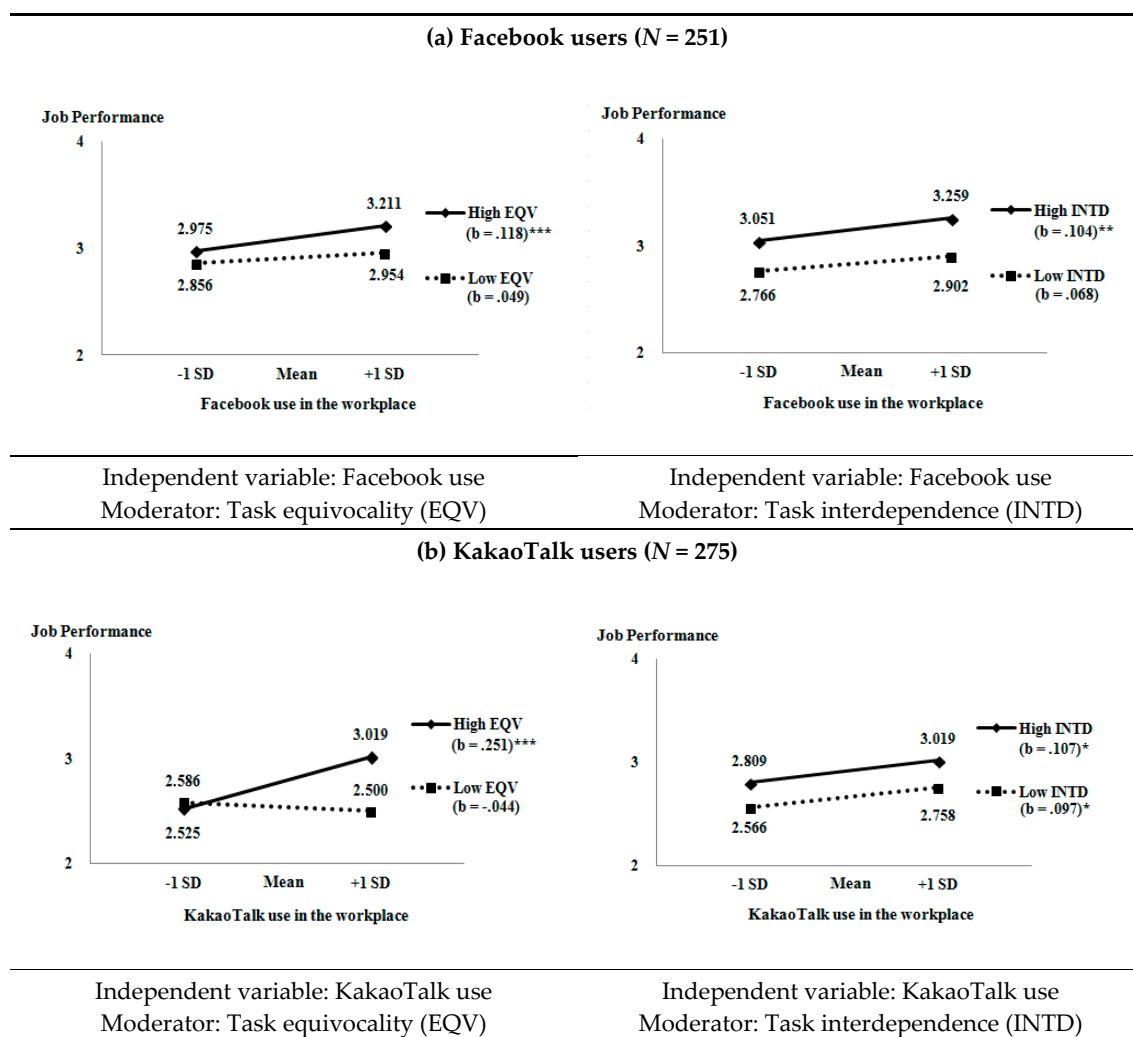
Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$

In the second PLS regression analysis on KakaoTalk users, the effect of KakaoTalk use in the workplace on job performance and the moderating effects of task characteristics regarding this effect were verified. KakaoTalk use in the workplace was positively related to job performance ($\beta = 0.187, p < 0.01$). Out of the two interaction terms, only one term was found to be significant. We found support for task equivocality $\times$ KakaoTalk use in the workplace ($\beta = 0.245, p < 0.005$); therefore, H2 and H4 were supported, while H6 was not supported.

The third PLS regression analysis was conducted on users of both Facebook and KakaoTalk. This analysis verified that there were positive relationships between Facebook use in the workplace and job performance, and KakaoTalk use in the workplace and job performance, as well as the moderating effects of task equivocality and task interdependence on these relationships. Facebook use in the workplace was positively related to job performance ($\beta = 0.111, p < 0.05$); however, the two interaction terms (task equivocality $\times$ Facebook use in the workplace and task interdependence $\times$ Facebook use in the workplace) were not statistically significant. These results align with those in the first PLS regression analysis. KakaoTalk use in the workplace was positively related to job performance ($\beta = 0.120, p < 0.05$), and one interaction term (task equivocality $\times$ KakaoTalk use in the workplace) was statistically significant ($\beta = 0.160, p < 0.01$). These results are the same as the results in the second PLS regression analysis. Therefore, H1, H2, and H4 were supported, while H3, H5, and H6 were not supported. The R^2 of the main effect model without the interaction terms was 0.286 and, when the interaction terms were added, it increased to 0.320. The effect size of this change f^2 was 0.023, which can be considered a small effect [104].

Figure 1 shows a graph of the moderating effects of task equivocality and task interdependence regarding the relationship between Facebook use in the workplace and job performance, and KakaoTalk use in the workplace and job performance [105]. In the graph, task equivocality and task interdependence

did not show any moderating effect on the relationship between Facebook use in the workplace and job performance. However, task equivocality indicated a positive moderating effect on the relationship between KakaoTalk use in the workplace and job performance. When task equivocality was low, KakaoTalk use in the workplace did not have a significant effect on job performance; however, when it was high, KakaoTalk use in the workplace significantly improved job performance. Task interdependence did not show any moderating effect regarding the effect of KakaoTalk use in the workplace on job performance.



5. Discussion

This study was conducted to determine how using Facebook and KakaoTalk in the workplace affects individual job performance, and the moderating effects of task equivocality and task interdependence, by targeting office workers in South Korea.

The results demonstrated a positive relationship between Facebook use in the workplace and job performance. Facebook use can enhance job performance mediated by organizational commitment [14] and social capital [48]. This improvement in job performance may offset its impairment due to distraction during work hours.

In their study on the effect of SNS use in the workplace on job performance through surveying Norwegian office workers, [16] indicated that SNS use in the workplace had a negative effect on job performance. The disparity between the present study and [16] may be due to cultural differences

between South Korea and Norway. A lot of research has characterized South Korea as a collectivistic country [106–108] and Norway as an individualistic country [109,110].

People in collectivistic cultures value family, friends, and their groups—such as colleagues in the workplace—over themselves [111]. They tend to have fewer, closer, and more enduring friendships than people in individualistic cultures [111]. SNS users in collectivistic cultures have fewer but more intimate friends, and tighter social relationships [111–113]. Social relationships with their colleagues in the workplace formed by using SNS may improve organizational commitment, because social interaction serves as a resource to office workers and enhances their affective attachment to the company [14].

Moreover, SNS users in collectivistic cultures not only performed in-group information sharing more often on SNS, but the information shared on SNS was also considered more useful to other in-group members [113]. Shared information from social networks in the workplace can enable them to engage in innovative behaviors [53]. Therefore, in collectivistic cultures, SNS use in the workplace can improve job performance.

In contrast, people in individualistic cultures value the self over their family, friends, and colleagues [111]. They tend to have more friends but looser connections to them and their friendships are less enduring [111]. SNS users in individualistic cultures have wider but looser social networks [111–113] and focus more on self-presentation [114]. Therefore, in individualistic cultures, SNS use in the workplace can be a distraction from work, impairing job performance.

KakaoTalk use in the workplace also showed a positive linear relationship with job performance. There may be two reasons for this: one is that instant messaging in the workplace is used mostly for work-related purposes [62]. As claimed by the computer-mediated communications interactivity model [34] and the media synchronicity theory [35], using instant messaging, which is a form of computer-mediated communication, can help work-related communication and improve job performance. Instant messaging like KakaoTalk is a richer form of media than other computer-mediated communications such as Facebook and blogs [67,76,77]. Therefore, it enables communication that allows for quick feedback and is focused on individuals in the workplace [67,75]. These functions may help in the performance of work-related activities.

Moreover, it enables effective communication in situations where face-to-face communications or telephone calls are not possible. When one needs to communicate but is in a meeting and cannot make a phone call, instant messaging can be used effectively [61]. In addition, when one must make a work-related announcement to many people at once, instant messaging can be helpful [61]. For this reason, in South Korea, many workers use KakaoTalk for work-related communications [115,116].

Another reason is that, while using instant messaging in the workplace may distract from work, this distraction is not so significant as to impair job performance. Reference [29] argued that, while using instant messaging in the workplace significantly increases work interruption, work interruption does not significantly impair job performance. They claimed that the workplace already presents many distractions aside from instant messaging, such as telephone calls, emails, face-to-face conversations, and meetings, and using instant messaging is not as much of a work distraction as these.

The positive effect of instant messaging services like KakaoTalk on job performance was found to be greater when task equivocality was higher. This is consistent with media richness theory, which states that rich media are more useful for increasing performance if task equivocality is higher [72,73]. For office workers who perform tasks with high equivocality, there are no structured methods for solving problems at work [70]. It is important to obtain compressive and comprehensive information to perform such tasks [117,118]. Besides, to obtain such information, it is more advantageous to use rich media with quick feedback and communication with various cues [72,73]. Therefore, instant messaging with the characteristics of rich media is more useful in communication for information exchange when performing tasks with high equivocality.

Unlike the case of KakaoTalk use, task equivocality showed no moderating effect on the relationship between Facebook use in the workplace and job performance. This is probably because office

workers tend to use Facebook in the workplace mainly for non-work communication in South Korea [16,17]. Facebook also has an instant messaging feature called Messenger. However, in South Korea, people mostly use KakaoTalk as an instant messaging service, and Facebook Messenger is rarely used [119]. The sample survey revealed that KakaoTalk took 95% of the mobile messenger market share in South Korea, followed by Facebook Messenger at 2% and Line at 1%, respectively [119]. Therefore, it can be inferred that, while KakaoTalk is mostly used for work-related purposes in the workplace [62], Facebook is not used primarily for work-related purposes [16,17]. According to the media richness theory, job performance improves when workers use either “rich” media for tasks with a high degree of equivocality or “lean” media for tasks with a low degree of equivocality [72,73]. This theory is concerned with the effect of media use for work-related communication on job performance. Since Facebook is rarely used for work-related communication [16,17], the result of Hypothesis 3 is inconsistent with the media richness theory; conversely, since KakaoTalk is mainly used for work-related communication [62], the result of Hypothesis 4 is in line with it.

The findings of this study indicate that task interdependence has no statistically significant moderating effect on the relationship between Facebook use in the workplace and job performance. It means that there is no significant difference in the positive effect of Facebook use in the workplace on job performance between office workers performing tasks with high interdependence and those performing tasks with low interdependence. This result differs from that of [13], who determined that task interdependence has a negative moderating effect on the relationship between Facebook use for work and job performance. The disparity between the two studies may have resulted from their use of different independent variables. Reference [13] opted for Facebook use for work, while the present study focused on Facebook use in the workplace. In [13], Facebook use for work means using Facebook to maintain and strengthen communication with colleagues and to obtain work-related information. On the other hand, the notion of using Facebook in the workplace presented by this study covers the use of Facebook for both work-related and non-work-related purposes. However, as mentioned earlier, Facebook is not used mainly for work-related purposes in South Korea [16,17].

As for the effect of KakaoTalk use in the workplace on job performance, task interdependence has no moderating effect. This means that there is no significant difference in the positive effect of KakaoTalk use on job performance between office workers performing tasks with high interdependence and low interdependence.

6. Implications

From a practical perspective, this study may have significant implications for firms creating policies concerning their employees' social media use. The results demonstrated that if office workers use instant messaging like KakaoTalk or SNS like Facebook in their workplaces, they may enhance their job performance. Therefore, firms may consider implementing policies that encourage their employees to use instant messaging or SNS. Moreover, it may be more beneficial for employees charged with high equivocality tasks, rather than low ones, to use social media such as instant messaging, which provides quick feedback and one-to-one communication.

From an academic perspective, the results of this study, which showed that the moderating effects of task characteristics on the relationship between KakaoTalk use and job performance differed from those between Facebook use and job performance, suggest that social media must be clearly categorized in studies related to the effects of social media use on job performance. There are many types of social media, including SNSs like Facebook and Twitter, instant messaging services like KakaoTalk and Line, blogs like WordPress.com and Blog.com, and information-sharing sites like YouTube [22,23]. However, many previous studies on the effects of social media use on job performance have not clarified which of the various types of social media they were targeting [3,7,17,18,120,121].

Some research has been conducted on the relationship between instant messaging services such as KakaoTalk in the workplace and job performance [29,56,60,61]; however, the moderating effect of task characteristics on this relationship has not yet been established. One of the theoretical implications of

this study is that the effect of using instant messaging services such as KakaoTalk on job performance may vary depending on the characteristics of the office workers' tasks.

7. Research Limitations and Future Research Directions

This study had the following limitations. First, since individual office workers who participated in the survey self-reported their job performance, this measurement was not objective. However, since the results of self-report evaluations have been found to have a high correlation with the results of supervisors' evaluations, they can be considered a valid alternative to the latter [14,122]. Moreover, participants can make more detailed assessments of their workplace performance than supervisors [122]. Furthermore, due to the difficulty in objectively measuring job performance, many previous studies have also used the self-report evaluation method [3,14,19,52,123–125]. Nonetheless, it is necessary to develop a methodology to measure individual job performance more objectively and apply it to future research.

Second, there are many types of social media, such as SNSs, instant messaging services, blogs, and information-sharing sites [22,23]; however, among these many types, this study only analyzed Facebook (SNS) and KakaoTalk (instant messaging service). Therefore, there are limitations in generalizing the results of this study—future research must focus on more diverse forms of social media.

Third, since this study focused only on the effects of Facebook use and KakaoTalk use on job performance, it did not examine which factors lead to such positive effects on job performance. In other words, it did not analyze the mediating variables for the effects of Facebook use and KakaoTalk use on job performance. Future research must, therefore, determine the mediating variables for how social media use came to affect job performance.

Fourth, since this study targeted office workers, the results cannot be generalized to other worker groups, such as doctors, legal jobs, and blue-collar workers. Future research must target workers from a more diverse range of occupations.

Fifth, the survey was conducted on office workers in South Korea, and therefore the results cannot be generalized to other countries. It is necessary to conduct studies on workers in other countries to increase the external validity of the results.

Finally, as this study was quantitative in nature, it had limitations in that it did not reveal in detail how using SNS and instant messaging in the workplace affects job performance. Qualitative research will be necessary for further in-depth studies in the future.

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