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# A Survey of Multitasking Behaviors in Organizations

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**Abstract**

Individual and organizational differences in multitasking have been largely ignored by previous research. As both individual employee and organizational characteristics exert unique and important influences on an organizational system, this study tentatively explores relationships between multitasking and individual differences and organizational outcomes. The individual differences include age, gender, personality, position in organization, tenure with employer, and industry. Organizational outcomes include commitment, job satisfaction, and pay satisfaction. A survey was administered to graduate students and alumni in an Executive MBA program, and an undergraduate business degree program. The study found that multitasking behaviors are widely occurring in the workplace, but employees' perceptions about multitasking conflict with their reported behavior. The results indicate that the productivity losses from multitasking and interruptions are substantial, yet very few companies provide training on how to multitask effectively. The findings also provide evidence of a possible generational component in multitasking effectiveness.

**Keywords:** Multitasking, Productivity, Individual differences, Interruptions

## 1. Introduction and Purpose

The impact of multitasking has previously been studied for a few specific occupations and tasks. These include "behind the wheel multitasking," airline pilots, chefs, information technology workers, fire fighters, surgeons, gaming dealers, and a few others. However, the focus of this paper is specifically on the application of multitasking in a business environment. The authors have found a significant amount of research on the nature and impact of multitasking in other environments, but little empirical research that can be widely generalized in the business arena.

This article discusses the second phase of a larger research project with three components: a literature review to summarize the extant neuroscience and organizational research on human multitasking, a descriptive study based on a survey conducted to identify current beliefs and practices regarding the use of multitasking in organizational settings (described in the paper), and an experimental study to identify the impact of multitasking on performance and other important organizational outcomes, considering the influence of independent variables such as age, gender, educational level, rank and tenure with the organization, and individual differences in personality.

The results of this survey were expected to inform strategies for maximizing individual and organizational efficiency and productivity. The findings may also have implications for employee selection, training, evaluation, retention, healthcare initiatives, and formulation of industrial standards and regulations. The research may also yield useful insights into the role of technology, social influences, liability, and risk.

This study specifically focused on micro-level organizational issues such as personal productivity, critical thinking skills, stress, and work-life balance, as well as macro-level issues such as organizational efficiency and agility, and human resource management. In addition to determining whether and to what extent multitasking leads to greater or reduced performance, we hoped to determine if there are differential effects of multitasking depending on the organizational outcome being studied (e.g., pay satisfaction, job satisfaction, employee commitment), and if there are individual differences in personality among employees that may influence multitasking efforts and perceptions.

## 2. Theoretical Background

A review of the literature has identified three major causes for the increased usage of multitasking in the business workplace: the changing nature of work, the enablement of Information and Communication Technologies (ICT), and time demands. Business organizations have experienced a change from the Taylor scientific approach of work design to more of a holistic approach (Lindbeck and Snower, 2000). Taylor's focus on standard task completion times led to a linear notion of work, and resulted in jobs that were specialized and focused. This concept of finishing a task before moving on to another has given way to the idea that "today's top priority is to immediately address whatever fraction of a vast, malleable range of tasks has become most critical – a just-in-time, networked work style" (Freedman, 2007). Workers are now required to engage in a wider variety of tasks, and to constantly shift their focus back and forth between tasks, capabilities once only required of managers. In his classic study of the manager's job, Mintzberg (1970, 1973) found that managers carry out many tasks each day, and that half the activities lasted less than nine minutes. By comparison, Gonzalez and Mark (2004) conducted a study of knowledge workers, stating that: "What somewhat surprised us was exactly how fragmented the work is. In a typical day, we found that people spend an average of three minutes working on any single event before switching to another event."

Existing research reveals multitasking impacts productivity, frequency of error, critical thinking skills, and the ability to concentrate. Previous studies on multitasking consistently indicate a significant increase in time required to complete a task when performing two or more tasks concurrently (or intermittently) versus staying with one task until completion (Pashler, 2000). Several studies hypothesize this loss of productivity is due to interruptions, and the concomitant time required to regain focus. Basex Inc. (2005), a US technology research corporation, states that "…interruptions take up more than two hours of the working day amounting to a cost of $588 billion a year to the U.S. economy." In addition to productivity losses, previous research suggests that the practice of multitasking leads to a higher frequency of errors. Reincsh, Jr., et al. (2008) found that multitasking caused an increased risk of content errors in emailing, such as misunderstanding a message, misstating one's own message, or sending a message to the wrong recipient. While the amount of existing empirical studies is minimal, research does indicate a problem of significant magnitude in terms of productivity losses and error rates.

Research also shows multitasking may even contribute to Attention Deficit Trait (ADT). Hallowell (2005) identified the psychological condition of ADT, with symptoms similar to Attention Deficit Disorder (ADD), characterized by distracted and rushed behavior due to frequent task switching, and resulting in sub-par performance and loss of concentration. Freedman (2007) cites a study that found that constant stimulus by email and other ICT's temporarily lowers IQ by 10 percentage points, which is the equivalent of losing a night's sleep. It is plausible that the decrease in concentration and ability to focus is responsible for the frequency of error found in multitaskers. Other research has found that multitasking and continuous partial attention can increase the frequency of error, increase stress levels, and the ability to concentrate and to make good decisions (Stone, 2007; McCartney, 1995).

In addition to these productivity and efficiency losses, there also are apparent effects on individual stress levels and work-life balance, as well as potential social repercussions. Research is also beginning to look at individual differences in attentional strategies and response to multitasking demands. Psychologist Robert Wicks (2010), states that each person has a range of resilience, or "the ability to meet, learn from, and not be crushed by the challenges and stresses of life" (p. 3). One's range is formed by a myriad of factors including early life experiences, heredity, knowledge, and one's level of motivation to meet life's challenges. "Family demands, financial pressures, multitasking, and a psychologically toxic work environment are but a few of the pressures we must face that collectively cause chronic stress" (Wicks, 2010, p. 25). While everyone experiences at least some similar stresses to varying degrees, this underlines the presence of individual differences in workers' ability and motivation to meet daily challenges and how these challenges and stressors affect people and, thus, organizations.

## 3. Methodology

The present study employed survey methodology for numerous reasons. Surveys are the most widely used tool in applied research, and they provide a systematic means of collecting descriptive information about the characteristics, practices, or attitudes of a defined population of participants (Isaac and Michael, 1995). Survey methodology is also useful in establishing baselines against which future comparisons can be made, and to analyze trends across time. Consistent with Bazerman et al. (1982) and Citera et al. (1999), data was collected during one session. Candidates for participation were sent an electronic invitation via e-mail providing them a hyperlinked address to the questionnaire website. They were able to access this questionnaire from any computer with World Wide Web access and they could complete it at a time convenient to them. Unique identifiers embedded in the URL were not utilized for this survey, making the responses truly anonymous, reinforcing confidentiality. For those persons who chose to participate, upon following the link provided, the study was explained in more detail and consent was given by having participants choose to agree or decline to do the study. Participants who did not choose at this time to participate were later sent a second and third reminder e-mail regarding the study which again contained the survey link.

### 3.1 *Research Questions*

Four research questions were derived from a review of the extant literature on multitasking (Crews and Russ, 2010).

1. What types of and to what extent are multitasking behaviors occurring in organizations, what are the general attitudes of employees towards these, and what are their perceptions of expectations and support from their organizations?
2. What is the relationship between multitasking and productivity?
3. Are there differential effects of multitasking depending on the organizational outcome being studied (e.g., pay satisfaction, job satisfaction, employee commitment)?
4. Do individual differences (e.g., workload perceptions, extraversion, conscientiousness, agreeableness, openness to experience, emotional stability) among employees influence multitasking efforts?

### *3.2 Survey Instrument*

The survey instrument was developed from a series of questions related to multitasking behaviors and practices, along with questions related to employee commitment, job and pay satisfaction, and personality. A set of initial survey questions was derived from the literature on multitasking and its impact on human and organizational performance. These questions were subsequently tested on seven graduate business students. These respondents provided initial feedback regarding question ambiguity and clarity, with regard to face validity. Their comments were incorporated and led to a revised instrument that was distributed to subject matter experts that teach business courses at the graduate and undergraduate levels. In content validation, a typical procedure is to have a panel of subject matter experts (other than the item writers) judge whether the items adequately sample the domain of interest (Crocker and Algina, 1986). Five faculty reviewed the instrument and provided feedback regarding content validity and survey design. The resulting survey instrument contained 33 questions concerning

multitasking behaviors and attitudes, 24 questions concerning employee commitment, three items concerning job satisfaction, 4 items concerning pay satisfaction, 40 items concerning personality, and 14 demographic questions. The items related to employee commitment, satisfaction and personality were not included in the validation process because the researchers chose to use previously validated items. All measures are discussed in detail below.

*3.3 Participants*

The survey instrument was sent via email to 643 graduating students and alumni in an Executive MBA program, and an undergraduate business program. Although a convenience sample, the participants were chosen because they represent a variety of industries, and include individuals at all levels of organizations, including front-line employees, specialists, supervisors, mid-level managers, and senior executives. As such, they embodied a representative sample of the general business population.

Responses were received from 175 subjects, a response rate of 27 percent. These respondents were between the ages of 20 and 63 ($M$ = 37.3, SD = 10.45). The sample consisted of 28 males (16%) and 132 females (75.4%), was predominantly full-time employees, with 80.3% working 40 hours or more per week at work, and consisted of employees at all levels within their organizations, with 59 participants being front line employees (37.1%), 40 being supervisors or team leads (25.2%), 41 mid-level managers (25.8%), and 16 at the senior or executive management level (10.1%). Most respondents have been with their current companies five years or less (67.3%), and have been in their current positions for four years or less (75.3%). The majority work in the healthcare industry (25.6%), followed by the fields of education (15%), financial services (13.1%), and government (7.5%). See Table 1 for more sample descriptives.

## 4. Measures

Multitasking behaviors were measured with 33 items asking for participants to gauge such things as how long they typically spend on work tasks uninterrupted, how long it takes them to refocus once interrupted, how frequently they respond to email, perceptions of and how they manage their workload, what types of technologies they regularly use at work and have operating at one time, their perceptions of the benefits of multitasking behaviors as well as their ability to be productive and efficient while multitasking, perceived organizational support and expectations regarding multitasking, and to what extent they bring work home and personal issues to work. Of the 33 multitasking questions, a series of 15 items rated on a 5-point scale of agreement (1 = strongly disagree to 5 = strongly agree) was presented to gauge opinions on the effectiveness of multitasking, social repercussions in the workplace of displaying multitasking behaviors, perceived organizational expectations, and work/life balance issues. An example item is, “I am able to concentrate better when working on one task at a time.”

Organizational commitment is a link between the employee and his or her organization that makes it unlikely the employee will voluntarily leave the organization (Allen & Meyer,

1996). Meyer and Allen's (1993) and Meyer et al.'s (2002) three-component organizational commitment framework is one of the most well developed in the literature.

i. Table 1

ii. ***Sample Descriptives (N = 160 participants)***

| | Total of N | Percentage of Total |
|---|---|---|
| Gender | | |
| Male | 28 | 17.5% |
| Female | 132 | 82.5% |
| Age (*M* = 37.3) | | |
| 20-24 | 23 | 14.4% |
| 25-29 | 19 | 12.0% |
| 30-34 | 30 | 18.9% |
| 35-39 | 22 | 13.8% |
| 40-44 | 18 | 11.3% |
| 45-49 | 25 | 15.7% |
| 50 and over | 23 | 14.2% |
| Industry of work | | |
| Healthcare | 41 | 25.6% |
| Education | 24 | 15.0% |
| Financial Services | 21 | 13.1% |
| Government | 12 | 7.5% |
| Information Technology | 8 | 5.0% |
| Retail | 8 | 5.0% |
| Transportation | 7 | 4.4% |
| Manufacturing | 6 | 3.8% |
| Non-profit | 5 | 3.1% |
| Construction | 4 | 2.5% |
| Hospitality | 4 | 2.5% |
| Telecommunications | 4 | 2.5% |
| Position in Organization (N = 159) | | |
| Front Line Employee | 59 | 37.1% |
| Supervisor or Team Leader | 40 | 25.2% |
| Mid-level Manager | 41 | 25.8% |
| Senior/Executive Manager | 16 | 10.1% |
| Tenure with Current Employer (N = 159) | | |
| <1 year | 18 | 11.3% |
| 1 year | 13 | 8.2% |
| 2 years | 24 | 15.1% |
| 3 years | 17 | 10.7% |
| 4 years | 25 | 15.7% |
| 5 years | 10 | 6.3% |
| 6 or more years | 52 | 32.7% |

| | | |
|---|---|---|
| Tenure in Current Position (N = 158) | | |
| <1 year | 23 | 14.6% |
| 1 year | 19 | 12.0% |
| 2 years | 31 | 19.6% |
| 3 years | 24 | 15.2% |
| 4 years | 22 | 13.9% |
| 5 years | 8 | 5.1% |
| 6 or more years | 31 | 19.6% |

Therefore, it is the framework adopted for this study. Despite the volume of organizational commitment literature, no research to date explores the three-component framework in relation to multitasking. This measure consists of three scales, Affective, Continuance, and Normative Commitment Scales (ACS, CCS, and NCS, respectively). Each of these scales consists of eight items, rated on a 7-point scale of agreement (1 = strongly disagree to 7 = strongly agree). An example item is, "I really feel as if this organization's problems are my own" (affective commitment). Reliability analyses were done for each subscale and the overall commitment scale, and no items were removed, results demonstrating internal consistency reliability estimates of $\alpha = .84$ (ACS), .71 (CCS), and .74 (NCS), and an overall scale reliability of $\alpha = .84$.

Satisfaction was measured with two scales, one assessing overall job satisfaction and one assessing satisfaction with pay. Job Satisfaction was measured with use of the Michigan Organizational Assessment Questionnaire, the Job Satisfaction Subscale (Cammann et al., 1979). The scale consisted of three items, rated on a 7-point scale of agreement (1 = strongly disagree to 7 = strongly agree). An example item is, "All in all I am satisfied with my job." This scale demonstrated an internal reliability of $\alpha = .93$. Pay Satisfaction was measured with the Pay Subscale of the Job Satisfaction Survey (JSS; Spector, 1985), consisting of four items, measured on the same 7-point scale of agreement as Job Satisfaction. A sample item is, "I feel I am being paid a fair amount for the work I do." This scale demonstrated internal reliability of $\alpha = .84$.

Personality was measured with Saucier's (1994) shortened version of Goldberg's (1992) Big Five personality measure. The scale contains 40 items with eight adjectives describing each of five personality traits – Extraversion (e.g., "bold", "energetic"), Agreeableness (e.g., "cooperative", "warm"), Conscientiousness (e.g., "organized", "efficient"), Openness to Experience (e.g., "complex", "creative"), and Emotional Stability (e.g., "relaxed", "temperamental"). Participants were asked to indicate the extent to which they agreed that the adjective described them on a 7-point Likert Scale (1 = strongly disagree to 7 = strongly agree). Based on descriptions by Goldberg (1992) and Judge et al. (1999), the five factors are as follows. Extraversion refers to one's level of energy, positive emotions, and the tendency to seek stimulation while in the company of others. This scale demonstrated an internal consistency reliability estimate of $\alpha = .86$. Agreeableness is the tendency to be kind and cooperative with others rather than antagonistic. This scale demonstrated an internal

reliability of α = .81. Conscientiousness is the tendency to show self-discipline and planned rather than spontaneous behavior. This scale demonstrated an internal reliability of α = .79. Openness to experience refers to one's level of curiosity, daringness, tolerance, and desire to fulfill personal pleasures and lead a varied life. This scale demonstrated an internal reliability of α = .74. Emotional Stability is the tendency to experience pleasant emotions easily such as being relaxed, and is in contrast to Neuroticism, wherein persons show high levels of anger, anxiety and depressive tendencies. This scale demonstrated an internal reliability of α = .72.

In addition, demographic and background data such as questions on gender, age, tenure and level in one's organization were also collected from the participants.

## 5. Results and Discussion

To answer the first research question concerning what types of multitasking behaviors are occurring, to what extent they are being utilized in organizations, what are the attitudes of employees towards these, and what are their perceptions of expectations and support from their organizations, frequency analyses were computed on the items assessing these behaviors. Frequency analyses as well as bivariate correlations were computed to answer the second research question regarding the relationship between multitasking and productivity. Bivariate correlations were again utilized to analyze research questions 3 and 4 concerning the effects of multitasking on the organizational outcomes of job and pay satisfaction and organizational commitment, and to determine if personality influences multitasking perceptions and behaviors. The key findings from these analyses are discussed below and reported in Tables 2, 3 and 4.

The results from this sample show many multitasking behaviors are widely occurring in the workplace (as expected), but employees perceptions about their multitasking abilities seem to conflict with their reported behavior. For example, while the majority of respondents stated they somewhat or strongly agree that multitasking leads to improved productivity and improved efficiency, they also reported an average of 9.28 minutes needed to refocus on a task after being interrupted. Respondents also stated they believed their organization not only requires multitasking abilities (M = 4.24), but they should require it (M = 3.96), while 70.3% stated their organization does not offer training in this required ability, with 12% not knowing if training was provided. Even though most participants reported multitasking skills were required and should be required and that it leads to improved productivity and efficiency, more than half of the respondents admitted that they make more errors when they multitask or they don't know if they are making more errors. Most also stated they can concentrate better when working on one task at a time (M = 3.88), and become distracted when others are showing multitasking behaviors during meetings such as emailing (M = 3.75), texting (M = 3.92) or answering a phone in a meeting (M= 4.30). As far as managing their workload, many respondents reported never or rarely engaging in behaviors to reduce interruptions, thus reducing the time needed to refocus their attentions. While many use goal-setting techniques and create to-do lists, out of 175 respondents, 93 never turn off their mobile devices, 115 never turn off their email, 97 never or rarely shut their office door, 126 never, rarely, or only

sometimes delegate to others, and 83 never or rarely use voice mail. When asked about work-life balance behaviors, as many participants stated that they bring work home one or two days each week (N = 60) as stated they never bring work home (N = 61). Also, 54 respondents stated they spend up to three hours per week on work during family activities, while another 25 spend anywhere from four to 20 hours per week on work tasks during family time. Similarly, 88 persons reported spending up to three hours on non-work tasks during work hours, with another 32 spending four to 20 hours.

With regards to the demographic, outcome and individual-difference variables we assessed, some interesting findings were uncovered. One such finding was a negative correlation with age and length of time to refocus on a task once interrupted ($r$ = -.17, $p$ <.05), as well as with age and tenure ($r$ = -.42, $p$ <.01). It's possible that older employees are better able to refocus their attention after being interrupted due to better cognitive processing abilities of multiple attentional demands, or more practice doing multiple activities at one time.

**iii.** Table 2

*iv.* *Frequency Analyses of Multitasking Items (N = 175 participants)*

| | **Mean, Standard Deviation** | **Total of N** | **Percentage of Total** |
|---|---|---|---|
| 1. Average time you spend on a work task uninterrupted | 24.96, 40.09 | | |
| 10 minutes | | 29 | 16.6% |
| 15 minutes | | 25 | 14.3% |
| 30 minutes | | 21 | 12.0% |
| 2. After an interruption, how long to refocus (in minutes) | 9.28, 13.16 | | |
| 3.Use of following technologies at work (5-pt scale): | | | |
| Computer (Every day) | 4.91, .49 | 167 | 95.4% |
| Land-based telephone (Every day) | 4.33, 1.13 | 117 | 66.9% |
| Mobile phone (Every day) | 4.12, 1.31 | 111 | 63.4% |
| Email (Every day) | 4.75, .83 | 157 | 89.7% |
| Instant Messaging (Every Day) | 2.92, 1.65 | 53 | 30.3% |
| Social Networking sites (Never) | 2.47, 1.57 | 74 | 42.3% |
| 4. Standard task completion time (in minutes) for work | | | |
| Yes | | 34 | 19.4% |
| No | | 141 | 80.6% |

| | Mean, Standard Deviation | Total of N | Percentage of Total |
|---|---|---|---|
| 5. Number computer applications normally open | 4.57, 2.74 | | |
| 6. Number tasks you can effectively do at same time | 2.58, 1.15 | | |
| 7. Organization provide training to multitasking effectively | | | |
| Yes | | 31 | 17.7% |
| No | | 123 | 70.3% |
| I don't know | | 21 | 12.0% |
| 8. Typically read/respond to work email (check all apply) | | | |
| Immediately | | 73 | 41.7% |
| When not in meetings or otherwise occupied | | 88 | 50.3% |
| Several planned times during the day | | 31 | 17.7% |
| Early in morning | | 34 | 19.4% |
| End of day | | 26 | 14.9% |
| 9. Typically read/respond to personal email | | | |
| Immediately | | 26 | 14.9% |
| When not in meetings or otherwise occupied | | 63 | 36.0% |
| Several planned times during the day | | 23 | 13.1% |
| Early in morning | | 16 | 9.1% |
| End of day | | 48 | 27.4% |
| 10. Number work-related emails in a day | | | |
| 0-10 | | 48 | 27.4% |
| 11-20 | | 36 | 20.6% |
| 21-30 | | 19 | 10.9% |
| 31-40 | | 10 | 5.7% |
| 41-50 | | 12 | 6.9% |
| 51-60 | | 14 | 8.0% |
| Over 60 | | 36 | 20.6% |
| 11. Number personal emails in a day | | | |
| 0-10 | | 132 | 75.4% |
| 11-20 | | 29 | 16.6% |
| Over 20 | | 14 | 8.0% |
| 12. Methods used to manage workload (5-pt scale) | | | |
| Goal setting (Often) | 3.85, 1.06 | 67 | 38.3% |
| To-do lists (Every day) | 4.31, .97 | 99 | 56.6% |
| Task queues (Sometimes) | 3.07, 1.42 | 43 | 24.6% |
| Managing interruptions (Sometimes) | 3.29, 1.16 | 57 | 32.6% |
| Turning off mobile devices (Never) | 1.94, 1.24 | 93 | 53.1% |
| Turning off email (Never) | 1.60, .99 | 115 | 65.7% |
| Shutting office door (Never) | 2.34, 1.31 | 69 | 39.4% |
| Delegating to others (Sometimes) | 2.83, 1.20 | 62 | 35.4% |
| Voice Mail (Never) | 2.68, 1.36 | 46 | 26.3% |

| | Mean, Standard Deviation | Total of N | Percentage of Total |
|---|---|---|---|
| 13. Multitasking leads to improved productivity | 3.52, 1.28 | | |
| 14. Multitasking leads to improved efficiency | 3.34, 1.28 | | |
| 15. Acceptable to read email during meetings | 2.53, 1.41 | | |
| 16. Acceptable to text during meetings | 2.18, 1.32 | | |
| 17. Acceptable to answer phone calls during meetings | 2.11, 1.23 | | |
| 18. Ability to multitask considered a job requirement | 4.24, .90 | | |
| 19. Ability to multitask should be a job requirement | 3.96, 1.15 | | |
| 20. I make more errors when I multitask | 2.89, 1.25 | | |
| 21. It is distracting when someone is emailing in a meeting | 3.75, 1.27 | | |
| 22. Distracting when someone is texting in a meeting | 3.92, 1.20 | | |
| 23. Distracting when someone answers phone in meeting | 4.30, 1.03 | | |
| 24. Able to concentrate better working on one task at a time | 3.88, 1.15 | | |
| 25. Often use evenings to catch up on work | 3.21, 1.43 | | |
| 26. Often use weekends to catch up on work | 2.92, 1.46 | | |
| 27. Must check email every day to keep from getting behind | 4.37, 1.01 | | |
| 28. Number hours work at work during week | 41.34, 11.90 | | |
| 40 hours | | 53 | 33.8% |
| 50 hours | | 26 | 16.6% |
| 29. Number days work at work per week | 4.81, .88 | | |
| 30. Average commute time each day to/from work | | | |
| 10-20 minutes | | 56 | 35.7% |
| 20-30 minutes | | 36 | 22.9% |
| 31. How often during average week bring work home | | | |
| 0 days | | 61 | 39.9% |
| 1 day | | 40 | 26.1% |
| 2 days | | 20 | 13.1% |
| 32. Time per week spent on work during family activities | | | |
| 1 hour | | 22 | 14.1% |
| 2 hours | | 21 | 13.5% |
| 3 hours | | 11 | 7.1% |
| 4-20 hours | | 25 | 16.0% |
| 33. Time per week on non-work tasks during work hours | | | |
| 1 hour | | 42 | 26.4% |
| 2 hours | | 34 | 21.4% |
| 3 hours | | 12 | 7.5% |
| 4-20 hours | | 32 | 20.1% |

Table 3:*Descriptive Statistics and Significant Correlations between Multitasking Behaviors (N = 175 participants)*

| Variable | | | 1. Age | 2. Tenure | 3. Gender (1 Male, 2 Female) | 4. Time to Refocus | 5. Number tasks do effectively at once | 6. MT Improves Productivity | 7. MT Improves Efficiency | 8. MT Increases Errors | 9. Concentrate better one task at a time | 10. MT Job Requirement | 11. MT should be Job Requirement | 12. Catch up Evenings | 13. Catch up Weekends |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **M** | | 37.3 | 6.63 | 1.83 | 8.35 | 2.58 | 3.52 | 3.34 | 2.89 | 3.88 | 4.24 | 3.96 | 3.21 | 2.92 |
| | **SD** | | 10.45 | 5.74 | 0.38 | 13.12 | 1.15 | 1.28 | 1.28 | 1.25 | 1.15 | 0.9 | 1.15 | 1.43 | 1.46 |
| **1** | | | – | .42** | -.25** | -.17* | -0.09 | -0.04 | -0.08 | 0.12 | 0.11 | 0.1 | -0.05 | 0.12 | 0.15 |
| **2** | | | | – | -0.15 | -0.05 | -.20* | -.16* | -0.09 | .16* | .18* | -0.01 | -0.12 | 0.11 | 0.12 |
| **3** | | | | | – | 0.01 | 0.03 | 0.15 | .16* | -0.15 | -0.13 | 0.05 | 0.15 | -.20* | -.24** |
| **4** | | | | | | – | .-.08 | -0.11 | -.21** | 0.09 | .20** | -0.02 | -0.04 | 0.11 | 0.03 |
| **5** | | | | | | | – | .41** | .43** | -.44** | -.45** | .29** | .41** | -.20* | -.18* |
| **6** | | | | | | | | – | .83** | -.48** | -.35** | 0.11 | .42** | -0.15 | -.16* |
| **7** | | | | | | | | | – | -.51** | -.34** | 0.11 | .43** | -0.15 | -16* |
| **8** | | | | | | | | | | – | .50** | -.18* | -.32** | .30* | .25** |
| **9** | | | | | | | | | | | – | -0.04 | -.22** | .33** | .29** |
| **10** | | | | | | | | | | | | – | .61** | 0.03 | -0.01 |
| **11** | | | | | | | | | | | | | – | -0.11 | -0.13 |
| **12** | | | | | | | | | | | | | | – | .76** |

*$p < .05$. **$p < .01$.

Table 4: *Descriptive Statistics and Significant Correlations between Multitasking Behaviors and Individual-Level Variables (N = 175)*

| Variable | | 1. Time Refocus | 2. # tasks at once | 3. MT improve Product | 4. MT improve Effic. | 5. MT increase Errors | 6. Concentrate one task | 7. MT Job Req. | 8. Job Sat. | 9. Pay Sat. | 10. Org Comm | 11. Affec. Comm | 12. Norm. Comm | 13. Cont. Comm | 14. Extraversion | 15. Agreeableness | 16. Conscientiousness | 17. Openness | 18. Emotion Stability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **α** | | | | | | | | | 0.93 | 0.84 | 0.84 | 0.84 | 0.74 | 0.71 | 0.86 | 0.81 | 0.79 | 0.74 | 0.72 |
| **M** | | 8.35 | 2.58 | 3.52 | 3.34 | 2.89 | 3.88 | 4.24 | 5.36 | 4.13 | 4.02 | 3.99 | 4.16 | 4.22 | 4.78 | 5.84 | 5.86 | 5.37 | 4.89 |
| **SD** | | 13.1 | 1.15 | 1.28 | 1.28 | 1.25 | 1.15 | 0.9 | 1.45 | 1.65 | 0.54 | 0.6 | 0.69 | 0.95 | 1.2 | 0.85 | 0.8 | 0.83 | 0.98 |
| **1** | | – | -.08 | -0.11 | -.21** | 0.09 | .20** | -0.02 | -.26** | -0.13 | -0.06 | -0.05 | -0.03 | -0.1 | -0.06 | 0.06 | -0.03 | -0.04 | -0.13 |
| **2** | | | – | .41** | .43** | -.44** | -.45** | .29** | 0.02 | -0.07 | -0.02 | -0.03 | -0.02 | -0.02 | -0.03 | 0.08 | 0.11 | .16* | 0.1 |
| **3** | | | | – | .83** | -.48** | -.35** | 0.11 | .17* | 0.1 | 0.11 | 0.11 | -.17* | -.17* | -0.03 | -0.04 | 0.06 | -0.02 | 0 |
| **4** | | | | | – | -.51** | -.34** | 0.11 | .23** | 0.08 | 0.14 | 0.1 | -0.13 | -0.13 | -0.04 | -0.04 | 0.12 | -0.01 | 0.06 |
| **5** | | | | | | – | .50** | -.18* | -0.14 | -0.02 | 0.06 | 0.03 | -0.02 | 0.07 | 0.01 | -0.03 | -.22** | -0.05 | 0 |
| **6** | | | | | | | – | -0.04 | -0.07 | -0.01 | .20** | 0.08 | -0.1 | .22** | -0.02 | 0.06 | -0.06 | -0.08 | -0.02 |
| **7** | | | | | | | | – | 0.1 | 0.04 | 0.15 | .20* | -0.08 | 0.07 | 0.1 | 0.14 | .16* | 0.08 | .17* |
| **8** | | | | | | | | | – | .52** | .16* | 0.15 | -0.1 | 0.11 | 0.14 | 0.15 | 0.1 | 0.12 | .17* |
| **9** | | | | | | | | | | – | 0.13 | .16* | -.18* | 0 | 0.04 | .22** | 0.03 | -0.05 | .23** |
| **10** | | | | | | | | | | | – | .61** | -.76** | .78** | 0.03 | -0.14 | 0.04 | 0.04 | -0.01 |
| **11** | | | | | | | | | | | | – | -.37** | 0.15 | 0.1 | -0.04 | 0.03 | 0.08 | 0.05 |
| **12** | | | | | | | | | | | | | – | -.35** | -0.01 | 0.13 | -0.04 | 0.02 | 0.07 |
| **13** | | | | | | | | | | | | | | – | -0.02 | -0.12 | 0.03 | 0.02 | -0.01 |
| **14** | | | | | | | | | | | | | | | – | 0.11 | .34** | .20* | .23** |
| **15** | | | | | | | | | | | | | | | | – | – | .18* | .44** |
| **16** | | | | | | | | | | | | | | | | | – | – | .27** |
| **17** | | | | | | | | | | | | | | | | | | – | 0.14 |

*$p < .05$. **$p < .01$.

Of course, as this survey measured perceptions, it may be that older employees simply think they are able to refocus their attention more quickly. Indeed, employees with more tenure in the organization showed a negative correlation with the number of tasks they believed they could effectively do at once ($r$ = -.20, $p$ <.05), and with the belief that multitasking leads to improved productivity ($r$ = -.16, $p$ <.05), and a positive correlation with belief that multitasking causes them to make more errors ($r$ = .16, $p$ <.05), and they can concentrate better on one task at a time ($r$ = .18, $p$ <.05). It may be that the work activities of newer employees are more rote, less complex tasks than older and more tenured employees. Findings also showed women are more likely to catch up on work at home on evenings ($r$ = -.20, $p$ <.05) and weekends ($r$ = -.24, $p$ <.01), which may represent greater demands on women to balance work and family life.

Two outcome variables of interest were job satisfaction and pay satisfaction. There was a positive relationship found between job satisfaction and the belief that multitasking improves efficiency ($r$ = .23, $p$ <.01) and productivity ($r$ = .17, $p$ <.05), and a negative relationship between length of time to refocus on task and job satisfaction ($r$ = -.26, $p$ <.01). There were also some significant relationships found with regards to the employee commitment variables. Normative and Continuance commitment were negatively related to the belief that multitasking improves productivity ($r$ = -.17, $p$ <.05 for both variables), and those high in continuance commitment were also more likely to state they can concentrate better on one task at a time ($r$ = .22, $p$ <.01). It might be that the increase in multitasking demands has reduced positive or affective commitment among these individuals. Affective commitment was also positively related to pay satisfaction ($r$ = .16, $p$ <.05), as was Agreeableness ($r$ = .22, $p$ <.01) and Emotional Stability ($r$ = .23, $p$ <.01), and Emotional Stability was also related to job satisfaction ($r$ = .17, $p$ <.05). There was a negative relationship between Conscientiousness and the belief that multitasking leads to an increase in errors ($r$ = -.22, $p$ <.01). These findings are important as there is scant research on individual difference variables with regard to multitasking, but much research showing that organizations should strive to hire individuals high in Conscientiousness as it is a good predictor of performance across jobs and industries, who are affectively, or emotionally committed to the organization, and who display high levels of satisfaction.

## 6. Summary and Directions for Future Research

The business landscape has become increasingly complex and rapidly paced, with individuals expected to perform more tasks in less time, and to respond to inquiries faster. Yet there is minimal research on the impact of multitasking on organizational and individual outcomes. This study found that multitasking behaviors are widely occurring in the workplace, but employees' perceptions about multitasking conflict with their reported behavior. For example, respondents reported an average of 9.28 minutes needed to refocus on a task after being interrupted. Three-quarters of respondents indicated working 30 minutes or less on a task without interruption, thus interruptions occur at least 16 times in a typical work day (average of at least two every hour based on an eight-hour workday). This could mean a

productivity loss of 148 minutes per day (16 interruptions times 9.28 minutes to refocus after each), which may indicate that as much as 30% of the average workday is unproductive due to multitasking behaviors and the associated interruptions. Yet most respondents do little, if anything to mitigate interruptions.

When asked how many tasks respondents felt they could effectively do at the same time, 126 stated two or three tasks, while 25 said only one task. Thus, the link between multitasking of tasks and effective performance may be a curvilinear relationship, with many persons being able to successfully perform two or even three familiar tasks with minimal error, but when adding more tasks or more complex tasks, the relationship becomes negative. This is something that will be explored in the next phase of this project, the experimental study.

The findings also provide evidence of a possible generational component in multitasking effectiveness, with a negative correlation between age and length of time to refocus on a task after interruption. Very few organizations offer training in how to multitask effectively. The focus of a future study might be to explore the impact of training on multitasking effectiveness. Such a study could further examine the impact of training on younger versus older workers.

Further research will be conducted using the survey data to explore in more detail the displayed differential effects of multitasking and personality, commitment, and satisfaction. In addition, the research can be utilized to inform strategies for individual and organizational efficiency, workload and work/life balance, employee selection, evaluation, and formulation of industrial standards.

Larger and more heterogenous samples should be tested and cross-validated with the results of this study, due to the limitation of this study with regard to convenience sampling, and the large percentage of respondents that are female. Further research will include an experimental study, followed by a field study which will test hypotheses in a specific organizational setting. This initial study is based on self-reported behaviors and perceptions. Future experimental and field studies will yield useful insights by observing actual versus perceived or self-reported behaviors. Future research might also explore the relationship between multitasking and error rates, the relationship between multitasking and psychosocial stress, and the impact of technology on multitasking effectiveness.

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