Accepted Manuscript

Mobile social networking and salesperson maladaptive dependence behaviors

Hatem Bata, Iryna Pentina, Monideepa Tarafdar, Ellen Bolman Pullins

Please cite this article as: Bata H., Pentina I., Tarafdar M. & Pullins E.B., Mobile social networking and salesperson maladaptive dependence behaviors, *Computers in Human Behavior* (2018), doi: 10.1016/j.chb.2017.12.025.

Mobile Social Networking and Salesperson Maladaptive Dependence Behaviors

Hatem Bata
Albany State University
School of business, 504 College Dr, Albany, GA 31705
Phone: 201-293-1362
Fax: (229) 430-5119
Email: dr.hatem.bata@gmail.com

Iryna Pentina (corresponding author)
University of Toledo
2801 W. Bancroft St., MS 103
Toledo, Ohio 43606
Phone: 419.530.2093
Fax: 419.530.4610
E-mail: iryna.pentina@utoledo.edu

Monideepa Tarafdar
Lancaster University School of Management
Bailrigg Campus, Lancaster
LA14YX, United Kingdom
Phone: +44(0) 1524594364
Fax: +44(0) 1524595764
E-mail: m.tarafdar@lancaster.ac.uk

Ellen Bolman Pullins
University of Toledo
2801 W. Bancroft St., MS 103
Toledo, Ohio 43606
Phone: 419.530.4273
Fax: 419.530.4610
E-mail: ellen.pullins@utoledo.edu

Mobile Social Networking and Salesperson Maladaptive Dependence Behaviors

Abstract

This study investigates technology dependence associated with the work-related use of mobile social networking (MSN) by salespeople. A scale for maladaptive technology dependence behaviors (MTDB) is developed and empirically validated using survey data from 242 mid-level sales managers in the US. Personal and job-related antecedents, as well as consequences of MTDB for sales outcomes, are also examined. Results suggest that emotional attachment to MSN and perceptions of its greater affordances for task accomplishment may lead to maladaptive behaviors of overreliance on MSN for job completion, blind trust, cognitive absorption and dysfunctional use. These associations increase in organizations with competitive psychological climate. Findings also show that using MSN for prospecting does not lead to maladaptive dependence, as opposed to using it for customer relationship maintenance. Salespeople using MSN for relationship maintenance exhibit more maladaptive behaviors if they experience work-related role stress. Finally, salespeople who exhibit MTDB are less likely to complete their assignments and participate in teamwork. These findings provide tools for organizations to develop technology use policies, design sales training, and enhance the work environment. Future studies can examine dependencies on others types of technologies (CRM, marketing automation, etc.), and in other contexts (online retailing, social media analytics, etc.)

Highlights:
- A new construct of maladaptive technology dependence behaviors (MTDB) is developed
- Media system dependency theory is used to propose a theoretical framework
- Antecedents and consequences of MTDB are tested in the context of sales profession
- Practical implications for organizational use of mobile social networking are offered
- Directions for future maladaptive technology research are suggested

1. Introduction

Sales and marketing professionals increasingly utilize social networking applications to gain better access to customers, analyze and evaluate their needs, obtain referrals, and to identify new revenue sources (Agnihotri et al., 2012). Mobile access to consumer social networks via smartphones and tablets offers salespeople additional benefits of real-time communication and personalization of customer experiences, as well as opportunities to provide relevant time-sensitive and location-based services (Giamanco and Gregoire, 2012; Magedanz and Simões, 2009). However, along with the opportunities for positive impact on sales effectiveness, issues such as inappropriate technology use, technology overuse, and technology dependence may arise, undermining organizational efforts to adopt these emerging technologies for better performance outcomes. Furthermore, the boundary-spanning role of salespeople who facilitate connection, communication and coordination both within the company and between the company and its external stakeholders, makes detecting such technology abuses especially challenging (Kusari et al., 2005).

Therefore, ensuring that mobile social networking is used efficiently, by the intended users, and in a manner that contributes to strategic and operational goals of the firm becomes an issue of critical importance (Agarwal and Karahanna, 2000). Not addressing this concern may negatively impact sales outcomes and organizational performance. The fact that many organizations have not yet developed policies or rules governing the use of mobile technologies by their sales force, emphasizes the imperative to understand causes and consequences of undesirable behaviors and ways to prevent them (Genova, 2010).

While previous research addressed issues of technology abuse in the workplace (Genova, 2010; Young, 2010), no studies to date have assessed such phenomena in the specific context of

1

ubiquitous mobile connectivity between boundary-spanning salespeople and the continually evolving social networks of customers. This context is unique in that salespeople working in the field increasingly rely on mobile technology, which is not subject to direct supervision or monitoring. This universal penetration of social media and mobile technologies into sales practice leads to blending the spheres of work and personal life, necessitating a dedicated research effort to a) identify and measure undesirable and detrimental technology-related behaviors by salespeople in the realm of mobile social networks, b) determine personal and environmental factors that engender such behaviors, and c) evaluate potential consequences of such behaviors for the sales outcomes.

This study draws upon the Media System Dependency Theory (Ball-Rokeach and DeFleur,, 1976; Ball-Rokeach, 1985) to explore maladaptive mobile technology behaviors in the sales context. In particular, we seek to identify maladaptive technology dependence behaviors manifested by salespeople in the process of using mobile social networking for work and to examine their personal and job-related antecedents, as well as their consequences for sales performance. In this study, mobile social networking (MSN) for sales is conceptualized as the use of mobile (e.g. smartphone or tablet) interfaces to engage with networks of customers and prospects via external to the company social media platforms (e.g. Facebook, LinkedIn, etc.), with the goal to facilitate the sales functions of communications, transactions and relationship building (Andzulis et al., 2012). MSN maladaptive dependence behaviors (MDBs), in turn, are defined as manifestations of excessive and uncontrolled interactions with mobile devices and social media platforms exhibited by salespeople in the process of using MSN for work (Ball-Rokeach, 1985; Caplan, 2002). Specifically, this study contributes to the literature by:

1) Developing a construct and a measure for MSN MDBs and validating it in the sales context;

2) Identifying and assessing the effects of personal and job-related antecedents of MSN MDBs, as well as moderators of their effects;

3) Assessing the consequences of MSN MDBs for salesperson job performance.

We accomplish these goals by developing and testing a conceptual model of antecedents and consequences of maladaptive behaviors, using data collected via a survey of 242 salespeople employed in the United States, in service and manufacturing industries. The remainder of the paper offers theoretical development of the research model and hypotheses, describes data collection and analysis methods, reports the results, and discusses theoretical contributions of the findings. Based on the research findings, theoretical contributions, recommendations for managers and future research directions are provided.

2. Theoretical Development

2.1. Media System Dependency Theory and Technology Dependence

The Media System Dependency Theory (MSDT) (Ball-Rokeach and DeFleur, 1976; Ball-Rokeach, 1985) posits that individuals and groups achieve their personal and collective goals by relying on certain media for informational and social needs. Greater reliance on media to fulfill goals leads to greater importance of media for the user, potentially resulting in media dependence. At the individual (micro) level, this dependence can be identified and measured with regard to a specific medium. Three general categories of technology use motivations are responsible for media dependence, including understanding (obtaining information and knowledge through the medium), orientation (acquiring skills and accomplishing tasks using the medium), and play (enjoying entertainment and relaxation through the medium) (Grant et al., 1991). These goal categories are not mutually exclusive, and a single medium can satisfy more than one goal (Ball-Rokeach and DeFleur, 1976). MSDT has been previously applied to examine

3

dependency relations with mass communication channels such as television (Grant et al., 1991), newspapers and radio (Loges, 1994). It has also been empirically tested in the contexts of the Internet (Patwardhan and Yang, 2003; Sun et al., 2008) and social media use to explain maladaptive user behaviors (Yang-Hwan, 2008). For example, Sun and colleagues (Sun et al., 2008) applied MSDT to Internet dependency and showed that some users become dependent on the Internet as a source of information, entertainment, and interpersonal connections. Yang-Hwan (2008) applied MSDT to study how social media use creates problems with respect to the motivation of college students. They found that attitudes and intentions to use social networks for entertainment and information gathering purposes may result in more positive attitudes towards social media, which in turn leads to greater intentions to use social media technologies and can cause dependency. However, no studies have attempted to ascertain the role of job-related objectives in conjunction with personal factors in engendering maladaptive behaviors of professional salespeople who use mobile media for work. Given that mobile social networks can easily blur personal and professional domains and satisfy informational, orientation and play objectives at the same time, MSDT can be instrumental in explaining how the job requirements to acquire and connect with customers may combine with personal needs to develop relationships and enjoy social interactions, leading to potential maladaptive behaviors among boundary-spanning salespeople.

2.2. The Construct of Maladaptive Technology Dependence Behaviors (MTDB)

Technology dependency, defined as excessive and uncontrolled interaction with the technology devices and software (Caplan, 2002), frequently results in dysfunctional behaviors characterized by the urge to seek technology and use it at the expense of other important activities. This can be observed in the work environment when users become increasingly

dependent on computer-related technology and feel trapped and confused when their computers break down or when the Internet is disconnected (Seppala, 2001). Other potential negative consequences of technology dependency include psychological outcomes such as depression and social isolation (Caplan, 2002). The focus of this study on maladaptive behaviors (as opposed to attitudinal or psychological aspects of dependence, such as technology addiction), is determined by the following stipulations: 1) behaviors are better measurable and addressable in managerial practice, providing greater relevance to the research results; and 2) emerging MSN technology offers uniquely novel use opportunities and may not be explicable by the existing psychological addiction perspectives (Essig, 2012), primarily because MDBs may not rise to the level of addiction (Beard and Wolf, 2001). As such, this investigation seeks to identify and categorize MDBs manifested by salespeople in the process of using MSN for work. MSDT also suggests that dependency is conditioned by both the user's environment (e.g. work settings or job requirements) and by individual differences (Ball-Rokeach and DeFleur, 1976). According to MSDT, these antecedents in combination may lead to maladaptive behaviors manifested by unbalanced use of technology and potential loss of control (Ball-Rokeach and DeFleur, 1976). A user is believed to be dependent on certain resources when the attainment of goals or satisfaction of needs by the user are contingent upon these specific resources (Ball-Rokeach and DeFleur, 1976). MDBs are manifested in the work context when users are excessively dependent on technology, have difficulty functioning professionally without it and experience a compulsive urge to seek technology (Seppala, 2001).

2.2.1. MTDB Dimensions

The four proposed dimensions of MTDB include: cognitive absorption, dysfunctional utilization, blind trust, and overreliance. These aspects reflect both the users' salient behaviors

and their subjective experiences with technology (Agarwal and Karahanna, 2000). It is important to note that new technologies (such as MSN) may be especially relevant for studying maladaptive dependence behaviors because they are ubiquitous, pervasive and interactive. These characteristics of new digital technologies may lead to users' deeper cognitive, affective, and behavioral involvement, resulting in deeper technology immersion with more prominent manifestations of all four MDB aspects.

Dysfunctional use refers to the salesperson use of MSN technology in non-work related activities such as gambling, games, multi-media sharing, dating, pornography, and chatting. Such activities may constitute a waste of work time, whereas instead of focusing on clients and their needs, the salesperson is entertaining him/herself. *Overreliance* denotes dependence on MSN technology to such an extent that a salesperson is not able to complete his/her work if the technology stops working, thus resulting in sensations of anxiety and vulnerability (Shu et al., 2011). This might negatively impact productivity because the salesperson sees the mobile social network as the only tool to get work done, possibly leading to low creativity in dealing with customers. In addition, technology problems could lead to work stoppages. *Blind trust* is the salesperson's unwarranted confidence in the efficiency, benevolence, and reliability (Benbasat and Wang, 2005) of MSN technology. A salesperson could possibly have strong confidence in information collected via MSN, irrespective of whether it is actually correct or useful. Such excessive belief and faith in the integrity of information gathered from MSN platforms may cause a salesperson to not look for alternative sources. *Cognitive absorption* denotes the user's feelings of temporal immersion, as well as heightened enjoyment and curiosity (Agarwal and Karahanna, 2000). In the state of cognitive absorption, the user's judgments and faculties become less effective in the technology use experience, and may even be temporarily suspended,

6

and the user's assessment of physical surroundings, time and even self-perception become misleading due to temporal immersion (Agarwal and Karahanna, 2000). This is further exacerbated by heightened enjoyment and curiosity due to pleasurable interaction with the technology (Agarwal and Karahanna, 2000). Therefore, cognitive absorption could negatively affect the salesperson's time management, causing disproportionate focus on tasks requiring technology use, while disregarding other relevant job activities.

While these aspects appear to represent the concept of maladaptive technology dependence behaviors (MTDB) well, presently no construct exists to specify and measure these constituent dimensions, or to understand the nature of their relationships within MSN in the sales contexts. This paper addresses these issues and develops a new construct and the associated scale for MTDB. Further, it also examines its nomological network that includes its antecedents and consequences.

--- Insert Figure 1 --

2.3. Research Model and Hypotheses Development

--- Insert Figure 2 --

2.3.1. Personal Antecedents of MTDB

Many users view their mobile devices as an extension of the self, as well as means to be socially connected with others (Daliot-Bul, 2007). Mobile social networking applications personalize activities of their users in real time, taking into account each user's preferences and interests, and provide an opportunity to express themselves instantaneously, leading to possible development of emotional attachment to these applications. Excessive emotional attachment to on-demand technology can have negative long-term consequences for psychological health, such as separation anxiety, by engendering a false sense of security and reliability (Keefer et al.,

7

2012). Successful salespeople are expected to build mutually beneficial long-term relationships with their clients. According to Geiger and Turley (2005), client socializing is a valuable selling strategy aiming chiefly for long-term business building, as well as fostering and sustaining a close client relationship in the business-to-business context. While MSN applications may help with this task, these social relationships represent weak ties, and are superficial or ephemeral. Hence, relying on relationships formed through MSN applications may reduce face-to-face interactions and potentially lead to increasing social and professional isolation (Turkle, 2011). Building a strong buyer–seller relationship, critical in selling, may not develop due to overreliance on MSN for communication. Many users may compensate attachment to technology for interpersonal attachment due to social isolation, potentially leading to maladaptive technology dependence behaviors.

H1: The higher the emotional attachment to mobile social networking, the higher the maladaptive dependence behaviors.

Perceived technology affordance refers to the potential of using a specific technology for goal-oriented actions (Markus and Silver, 2008). The decision to use technology is based on user's perception of its functionality and instrumentality for achieving his or her goals (Gibson, 1986). In the context of MSN use for sales, two functionalities of this technology can be distinguished. Specifically, *diversity of features* is the extent to which MSN use can enable the salesperson to accomplish tasks in multiple ways (Hartson, 2003). *Diversity of task*, on the other hand, is the range of sales-related tasks that can be accomplished by using MSN (Lysonski and Johnson, 1983). According to MSDT, a user who believes in the affordance of technology to satisfy his/her goals is more likely to become dependent on technology. People are dependent on technology due to its potential (affordance) to satisfy their needs (Ball-Rokeach, 1976). Hence,

8

the salesperson is more likely to be dependent on MSN applications if he/she believes that the technology will help him/her achieve more sales goals in more possible ways. A salesperson may become increasingly dependent on technology because of its affordance to communicate and build better relationships with clients, understand their needs, and educate customers about different products (Andzulis et al., 2012). Since salespeople serve as a bridge between social networks inside and outside the organization, they are more likely to see mobile technology as important because of its ability to help them connect both with customers and with colleagues inside their organization (Agnihotri et al., 2012). Focusing on MSN technology to achieve all their goals, however, may lead to overuse, causing maladaptive dependence. In addition, overreliance on computer-mediated social interactions due to their affordance and unique communicative capabilities, makes mobile social networking applications seem more like a life-line to the outer world rather than a means of communication (Caplan, 2002), potentially leading to maladaptive dependence behaviors.

H2: The higher the perceived affordance of mobile social networking for sales, the higher the maladaptive dependence behaviors.

2.3.2. Job-Related Antecedents of Maladaptive Technology Use

According to Hunter and Perreault (2006), salespeople's job-related motivations to use technology include access to, analysis, and communication of information for sales planning and adaptive behaviors. Applying MSDT to the sales context purports that salespeople are motivated to use MSN for work-related tasks such as a) prospecting and b) managing relationships. We define prospecting motivation as the process by which salespeople attempt to look for qualified buyers. It may include cold calling, canvassing, or advertising. Social media give the salesperson the ability to look for early leads or obtain detailed information about them (Krishnan et al.,

9

2012). Salespeople may also use social networking media to request referrals and to data-mine social profiles of current customers, looking for prospects. The two-way communication also allows to discover new sales opportunities for cross-selling and up-selling (Rapp et al., 2012). We define relationship management motivation as the process of attracting, developing, and retaining customers with strong, lasting relationships that mutually benefit sellers and buyers. Social media may potentially be used to enhance and build social capital through online social interactions and exchange of information (Krishnan et al., 2012). Salespeople also use MSN for "social media monitoring" to collect information pertaining to customer requirements, complaints, and experiences from blogs and social media applications (Trainor, 2012). Salespeople can obtain real-time feedback, or learn about potential demand for a new product or service, by using MSN. Valuable information can also be obtained by observing the issues, questions, concerns, and even experiences shared by customers (Rapp et al., 2012).

Due to increased competitiveness, salespeople increasingly utilize MSN applications in their work environment, becoming "knowledge dependent" and in need of ongoing real-time data on consumer habits and product performance (Hunter and Perreault, 2006). MSN allows the salesperson to keep up with changing customer tastes, preferences, and habits. Stone and Stone (1990) hypothesize that while users may initially use technology for instrumental purposes, they may eventually become dependent. A salesperson may see MSN becoming more helpful in attaining career goals than other tools. Hence, the salesperson will have increased exposure and attention vis-à-vis the technology, making it play an exceedingly important role in his/her life (Ball-Rokeach, 1985). Prolonged exposure may potentially lead to the formation of unhealthy habits of media use such as spending extended time using MSN, resulting in disruption of real, meaningful social ties (Weiser, 2001). Prolonged use could also spill the online experience over

10

to the user's offline life, making the user live in an imaginary world and losing touch with reality. According to the learning theory, habitual use of technology may commence non-pathologically, but with the passage of time may lead to maladaptive dependence behaviors through operant conditioning (Shaffer et al, 2000). Due to conditioned behavior and the interactive nature of technology, its use becomes more aligned with patterns of stimulus and response of behaviorism than a functional tool to get work done, leading to further maladaptive dependence behaviors. For a salesperson, this may translate to his/her motivation to use MSN for specific aspects of the job. As these users are successful, they intensify the original motivations, eventually leading to maladaptive dependence. We thus hypothesize:

H3a: The higher the prospecting motivation, the higher the maladaptive dependence behaviors.

H3b: The higher the relationship management motivation, the higher the maladaptive dependence behaviors.

2.3.3. **Moderating Role of Organizational Environment**

Organizational environment plays an important role in strengthening the relationship between technology use and technology dependency behaviors. Dependencies are linked to the organizations' goals in seeking, using and distributing information. Structural dependency can be described as the effect of policies in the work environment on strengthening the relationship between individual media uses and dependence behaviors. Organizations increasingly encourage their employees to rely on digital and social media to raise profit, build brands, learn about their environment, and increase their access to national and international markets (Ball-Rokeach, 1985). Such social, institutional and relational contexts surrounding the employees lead to the formation of norms, expectations, and sanctions in relation to using mobile social networking media in sales (Mirela and Iulia, 2013). We propose three organizational factors as moderators of

the relationship between motivations to use MSN technology and its resulting maladaptive use.

Competitive psychological climate is the extent to which employees believe organizational rewards to be dependent on their performance in comparison to that of their coworkers (Brown et al., 1998). In an environment with low competition the salesperson can obtain help and social support from colleagues, which may reduce emotional bonds with technology. According to MSDT, individuals are prone to use technology and become dependent on it in times when individuals sense vulnerability. Hegemony over information resources is considered a source of power within institutions, and the more access to information the individual has, the better he/she can achieve work goals, which may potentially intensify the role of emotional attachment in forming maladaptive behaviors. This may be especially amplified in an environment where employees are competing against their colleagues, and where there are 'winners' and 'losers'. Hence, a competitive psychological climate may possibly strengthen the relationship between emotional attachment to MSN and maladaptive dependence behaviors. A competitive climate also strengthens the relationship between perceived technology affordance and MDBs, since competition forces salespeople to become more efficient and effective. The more capabilities the technology provides for salespeople to achieve their competitive goals, the more the salespeople will depend on these technologies. Furthermore, a salesperson's ability to control information resources using the technology gives him/her power within the organization. This increased access to information makes the individual more dependent on technology to achieve his/her goals (Ball-Rokeach, 1985).

H4a: Competitive psychological climate positively moderates the relationship between emotional attachment and maladaptive dependence behaviors.

H4b: Competitive psychological climate positively moderates the relationship between perceived

affordance and maladaptive dependence behaviors.

Role stress exists when individuals experience role ambiguity and role conflict (e.g., Fournier et al., 2013; Rizzo et al., 1970). Role conflict occurs when a salesperson perceives that different groups' expectancies and demands are contradictory and cannot be satisfied at the same time, leading the individual to feel torn in multiple directions (e.g., Onyemah, 2008; Rizzo et al., 1970). Role ambiguity is observed when the salesperson perceives that he/she does not have the information necessary to perform a job or task, leading the individual to feel helpless (e.g., Onyemah, 2008; Rizzo et al., 1970). If employees are working in an organization with clearly defined roles, there will be minimal role ambiguity and conflict, leading to less role stress. Lack of role stress means less confusion and tension. Employees will need less information due to lower uncertainty and will therefore spend less time on mobile social networks collecting information to understand their business environment. This, in turn, will weaken the relationship between technology use and maladaptive dependence behaviors. On the other hand, salespeople are boundary crossers, which makes them more vulnerable to role stress because their job entails serving constituents inside and outside the organization. According to MSDT, dependency behaviors with respect to media use are heightened in environments with high uncertainty due to the increase in social conflict presenting challenges to established beliefs, institutions and practices. Furthermore, the individual relies on media technology to understand the environment in times of uncertainty in order to decrease the extent of cognitive and affective discomfort (Ball-Rokeach, 1985). Hence, higher role stress will make them more likely to spend more time using technology to analyze and understand the complex business environment of their competitors and customers. This, in turn, may play an important role in strengthening the relationship between job-related motivations for technology use, such as prospecting or building

13

relationships, and maladaptive dependence behaviors. Due to increased global competition, firms seek to form alliances with diverse partners along the supply chain. Successful firms depend on their sales forces to communicate and build strong relationships with partners (Kiessling et al, 2004). This may put additional role stress on salespeople trying to serve multiple customers and almost certainly having to use technology to coordinate, communicate, and build relationships. Social media enable salespeople to maintain customer relationships and enhance customer retention, after the sale is complete. They could help the salesperson develop in-depth knowledge about the client's environment and needs, helping the salesperson to provide relevant solutions to customer problems (Giamanco and Gregoire, 2012). According to MSDT, when a user perceives technology to be helpful for achieving certain goals, they selectively expose themselves to the technology, leading to potentially spending more time using mobile social network technology, thus increasing the likelihood of dependence (Ball-Rokeach, 1985). This, in the long term, could make role stress strengthen the relationship between specific task motivations and maladaptive technology dependence behaviors.

H5a: Role Stress positively moderates the relationship between prospecting motivation and maladaptive dependence behaviors.

H5b: Role Stress positively moderates the relationship between relationship management motivation and maladaptive dependence behaviors.

2.3.4. Impact of Maladaptive Technology Behaviors on Salesperson's Performance

Job performance is the salesperson's ability to satisfy external customers while balancing organizational needs effectively and efficiently. It can be evaluated by such important outcome variables as team participation and task completion.

Team participation is a process when members of a group or a team contribute, cooperate,

14

and collaborate by influencing, interacting, sharing information, and offering ideas. Team members also communicate frequently in order to assimilate individual members' knowledge and develop a common knowledge base (Zhang and Begley, 2011). Salespeople exhibiting maladaptive dependence behaviors are more likely to be cognitively absorbed by technology. They are more likely to not feel the passage of time, to enjoy themselves while surfing aimlessly or being mentally absent (Agarwal and Karahanna, 2000). Spending excessive time using technology may lead to social isolation, since they may spend most of their time online instead of communicating with their professional community and co-workers face-to-face. In addition, their social needs exceedingly become fulfilled online, providing temporary relief from their communication and social problems. Over time, their offline social skills may erode and they may not be able to relate, empathize, or communicate effectively with others (Freeman, 2009). Therefore, they become unlikely to pay attention or be able to communicate with their teammates or work groups.

H6a: The higher the maladaptive dependence behaviors, the lower the team participation.

Task completion is the amount of work completed, including activities, actions, information and resources needed to complete it (Toms et al, 2013). Maladaptive dependence behaviors will make salespeople more likely to utilize their time with mobile social networking in non-work related activities such as entertainment and socializing, while devoting less time to important job activities, leading to decreased productivity (Thompson and Bluvshtein, 2008). Therefore, they are less prone to finish their task requirements. MSN applications may fill social voids in the user's life and produce an ongoing cycle of more dependency and less attention to work. Increasingly, supervisors discipline and even fire employees who spend excessive time using technology in non-work-related activities. According to a 2005 survey on technology abuse in

15

the workplace, conducted by the American Management Association and e-Policy Institute, over half of participating organizations reported to have fired or disciplined workers over technology abuse issues (Thompson and Bluvshtein, 2008), demonstrating a belief that technology over-use for personal reasons impacts the ability to complete work tasks.

H6b: The higher the maladaptive dependence behaviors, the lower the task completion.

3. Method

3.1. Survey Design and Instrument Development

Existing measurement scales were used for all constructs in the research hypotheses, except for the construct of maladaptive technology dependence behaviors. This construct was developed and its scale was created in this study. Initial item generation for the measurement of the construct adhered to the construct's proposed definition. Based on the literature, maladaptive technology dependence behavior is represented by four dimensions: cognitive absorption, dysfunctional use, blind trust, and overreliance. In order to further develop and refine the scales, 126 items were reviewed by five academics and re-evaluated through structured interviews with three salespeople (Churchill, 1979). Based on their feedback, redundant and ambiguous items were either modified or eliminated. This process addressed the content validity of the instrument. The resulting 97 items were subjected to additional pre-survey validation and testing using the Q-sort methodology (Moore and Benbasat, 1991). Six salespeople with significant work experience were chosen and participated as judges in the Q-sort process (Churchill, 1979). Three of them were chosen from academia, and the other three came from industry. A thorough analysis was conducted following each round to evaluate and decide the disposition of ambiguous items (Churchill, 1979). The items were placed in three rounds of Q-sort. After the three rounds, the inter-judge raw agreement score was 100% (108/108), the placement (hit) ratio increased to

16

100% (216/216), and the Cohen's Kappa score increased to 100%. Since 100% is the maximum score to estimate convergent and discriminant validity using the Q-sort method (Landis and Koch, 1977), the final 23 items were submitted for use in a large-scale survey.

Scale items measuring emotional attachment were adapted from Thomson et al. (2005), and those measuring perceived technology affordance were based on Tsai and Ho (2013). The scale for prospecting motivation was adapted from Rodriguez et al. (2012), and that for relationship management motivation - from Plouffe et al. (2013). Role stress measures came from Rizzo et al. (1970), and those for competitive psychological climate - from Brown et al. (1998). Team participation items were adapted from Anderson and West (1998), and task completion items - from Claessens et al. (2010). All of these scales were adapted as necessary to account for the sales profession and mobile social networking context of the study. The wording of some items was changed to make sure they would be understood by salespeople, without changing the meaning. All items were measured on a five-point Likert scale: from 1 – strongly disagree to 5 – strongly agree.

3.2. Data Collection

An online survey was used for data collection. The researchers used an email list of executives obtained from the LexisNexis executive search database. This search engine provides contact information of executives based on their job title, industry, and location. We targeted middle level sales executives, managers and salespeople in the field, since they are the ones involved with day-to-day interaction with customers and exposed to MSN applications to a great extent. An initial sample frame of 4500 potential respondents meeting the research criteria of being middle executive sales manager and using MSN technology in their business was created, from the larger email list. The researchers sent emails to potential participants asking them to

participate in the study. If an executive did not have a listed email but had a listed phone number, the researchers called the number and attempted to talk to the participants. If the participant did not have a listed email or a telephone number, the researcher called the participant's place of work and asked to be transferred to the participant. Initially, 50 respondents filled the questionnaire; the researchers called the remaining potential 4450 respondents to encourage them to participate. This was followed up with a maximum of two email reminders. The final number of responses was 450. After discarding 208 responses that were incomplete, 242 valid responses were retained, for a response rate of 5.6% (242/4500).

3.3 Statistical Analyses Used

To ensure empirical validity of the newly developed MTDB construct, an exploratory factor analysis (EFA) using SPSS 15.0 was conducted with the purposes of scale purification and dimensionality assessment. This test was followed by a confirmatory factor analysis (CFA), using AMOS 5.0, to evaluate the properties of the refined scale and to assess its convergent and discriminant validity.

Structural Equation Modelling (SEM) was used to analyse the measurement model and to test the hypothesized relationships (Hair et al. 1998). Following directions from Anderson and Gerbing (1988), our analysis used a two-step approach. In the first step, the measurement model of each construct was tested to establish construct validity and reliability; in the second step, the structural model of the hypothesized relationships was tested. SEM is considered an appropriate technique in this situation, because the purpose of the study is to examine a series of interrelationships between simultaneous endogenous and exogenous variables in defining multifaceted constructs and studying path dependent variances (Hair et al., 1998). The path model is used to test the direct relationships between independent and dependent variables using

18

the iterative maximum likelihood algorithms for path analysis in AMOS. The moderation effects were tested in AMOS using the interaction moderation known as Ping (1995) MSEM method.

Following a reviewer's suggestion, we conducted Harman's single factor test to address the issue of potential common method variance, sometimes arising with data collected through self-administered surveys. This test uses exploratory factor analysis to examine the un-rotated factor solution and determine if a single factor can account for most variance in all variables. In our case, no single factor explained greater than 25% of the variance. Since this value was lower than the 50% threshold (Podsakoff et al, 2013), we concluded that the possibility of common method bias to be present in our data was low.

4. Results and Discussion

4.1. Validation of the MTDB Construct

Exploratory factor analysis (EFA) with Oblimin rotation was performed on the MTDB construct using SPSS 15.0. The validation of MTDB was done with the following objectives: 1) purification of the scale; 2) unidimensionality assessment; 3) establishing convergent validity; and 4) establishing discriminant validity (Churchill, 1979). Five dimensions converged, based on their factor loadings. They were labelled temporal immersion, heightened enjoyment and curiosity, dysfunctional use, blind trust, and overreliance. These dimensions broadly followed the aspects described in the Media Systems Dependency Theory (MSDT) by showing all the factors in the construct (Table 1).

-- *Insert Table 1* ---

Confirmatory factor analysis (CFA) was then used for further construct validation and to test whether second-order factors exist. The Analysis of Moment Structures (AMOS) 5.0 was employed to evaluate the properties of the scale. The larger the factor loadings or coefficients (as

compared with their standard errors and expressed by the corresponding t values), the stronger the evidence that the measured variables or factors represent the underlying constructs (Bollen, 1990). Item purification was carried out by eliminating the items if their factor loading score was below a threshold value of 0.5. CFA supported the four-component structure instead of the five factors in the EFA due to the existence of a single second-order factor. Cognitive absorption, dysfunctional use, blind trust, and overreliance were the four factors produced by the CFA. Temporal immersion and heightened enjoyment/curiosity from the EFA converged in the CFA onto a single second-order factor that was named cognitive absorption (Table 2).

-- *Insert Table 2*--

As seen in Table 3, the composite reliability values for all the factors are above 0.7, indicating a strong reliability of the measure (Byrne, 2013). The AVE values were compared to the correlation coefficients among the constructs. The AVE values (shown on the diagonal) all exceed 0.5. All square roots of AVE values exceed the correlation coefficients, establishing discriminant validity.

-- *Insert Table 3*--

We next carried out CFA for all the other constructs, for which we adapted scales from the literature. The results are shown in Table 4.

-- *Insert Table 4*--

4.2 Hypotheses testing

Figure 2 and Table 5 summarize the results of hypotheses testing. Hypotheses H1, H2, H3b, H4a, H4b H5b, H6a, H6b, were supported, while hypotheses H3a, and H5a were not supported. The RMSEA below 0.09 supports good model fit. The CFI, GFI and IFI approached the 0.9

20

threshold and are deemed acceptable for this exploratory study.

-- *Insert Table 5* --

-- *Insert Figure 3* ---

4.3 Discussion

Our findings indicate that greater emotional attachment to MSN increases likelihood of maladaptive technology use (supporting H1). Users who develop a strong emotional bond with mobile social networking technology exhibit greater blind trust, overreliance, and cognitive absorption dimensions of MTDB. Perceived affordance of the MSN technology to accomplish diverse tasks by offering diverse features can also increase MTDB (H2 supported). This means that a salesperson may develop maladaptive dependence by focusing on the technology's potential to build relationships with clients online and could potentially neglect other opportunities to connect with customers, such as face-to-face interactions, focusing on developing weak ties at the expense of strong ones (Turkle, 2011).

Contrary to our expectations, the prospecting motivation of using MSN does not appear to cause maladaptive behaviors among salespeople (H3a not supported). During the prospecting stage, salespeople try to search for interested buyers by looking at probable leads. It potentially entails cold calling and canvassing. Social media may give the salesperson the capability to look for early leads or obtain detailed information about them (Krishnan et al, 2012), but a face-to-face meeting may be needed for buyers and sellers to commence a business transaction. A personal touch may perhaps be needed to gain the clients' initial trust as "people buy from people", and a salesperson possibly will need the face-to-face interaction to know if the client has the authority, finances, and willingness to buy (Jolson and Wotruba, 1992). Therefore, MSN may not play an important role in the initial steps of the sales process such as the prospecting

stage, and thus this job-related motivation may not lead to maladaptive dependence behaviors. Another job-related motivation to use MSN by salespeople, the relationship motivation, was found to be related to MTDB, supporting H3b. As the salesperson spends more time in social media trying to build relationships with clients, the probability of greater habitual use of MSN and the resulting BTDB may increase.

Competitive psychological climate was found to intensify the influence of emotional attachment on MTDB, supporting H4a. It appears that in a highly competitive environment, the salesperson may have difficulty receiving help and social support from colleagues. This may increase emotional bonds with technology to connect both with clients and with people outside work for emotional and social support. According to MSD theory, individuals are likely to use technology and become dependent in an environment where they feel helpless (Ball-Rokeach1985). Perception of greater expert power, resulting from access to and control of professional information, reduces the individual's feeling of helplessness (Mechanic, 1962), thus linking emotional attachment to maladaptive behaviors. Competitive organizational climate also strengthens the relationship between perceived technology affordance and MTDB, supporting H4b. Competition motivates salespeople to become more resourceful and competent. Technology assists the salesperson in realizing his/her competitive objectives. Therefore, believing that one can competently utilize mobile social networks to compete with colleagues is likely to increase a salesperson's dependence on technology, eventually leading to maladaptive dependence behaviors. Furthermore, the salesperson's capability to control information resources using technology affordance gives him/her authority within the organization, increasing his or her competitive standing. This enhanced access to information makes the individual more dependent on technology to achieve his/her goals (Ball-Rokeach, 1985).

22

Job-related role stress does not increase the effect of the prospecting motivation on MTDB (H5a is not supported). Given the earlier finding of no effect of the prospecting motivation on MTDB, it is apparent that increased job role stress does not make this effect statistically significant. It is possible that being boundary spanners and serving clients outside and inside the firm, salespeople are uniformly characterized by high levels of role stress. Interestingly, role stress does magnify the correlation between the relationship motivation to use mobile social networks and maladaptive dependence behaviors, supporting H5b. In an environment where there is ubiquitous role stress, individuals are more likely to seek more information in order to reduce confusion and ambiguity (Ball-Rokeach, 1985). Relationship building in an environment with lots of unknowns and uncertainties may make a salesperson more motivated to collect more information from their clients and communicate it more often, leading to an increased likelihood of maladaptive dependence.

Maladaptive technology behaviors were found to diminish team participation (supporting H6a). As time passes, the user's face-to-face social skills will likely decrease as the volume of digital communications increases. This may lead to diminished participation in teams and reduced communication with teammates or work groups due to lack of time and opportunity for meetings and coordination of activities. Maladaptive technology behaviors also lower sales task completion (6b supported). This may happen due to increasing opportunity to be distracted and waste his/her time with mobile social networking in non-work related activities such as entertainment and socializing, while dedicating less time to essential job activities, resulting in dwindled productivity (Thompson and Bluvshtein, 2008). For that reason, a salesperson will be less inclined to finish his/her task requirements.

Before moving on to discuss theoretical and practical contributions of our study, we make a

23

note of its limitations. First, the use of cross-sectional data provides only a snapshot of the potential association of MSN technology use and dependency behaviors. As new applications are developed and become more widespread in industry, these relationships could change. Therefore, in the future, longitudinal research may be in order. Second, the data were collected from salespeople working in firms located in the United States. Given the range of cultural differences in technology use, as well as different perceptions, future research should consider the generalizability of these findings to other parts of the world. It would be useful to engage in comparative research studies to see the impact of culture on technology dependency in the MSN context.

5   Contributions to Theory and Implications for Practice

This paper makes a number of theoretical contributions to our understanding of how salespeople are adjusting to the ubiquitous and pervasive use of mobile technologies that is increasingly becoming the norm. First, we conceptually develop and define the construct of 'maladaptive technology dependence behaviors' of salespersons in the context of their use of mobile social technologies. This concept adds a new theoretical dimension to the existing research on technology use by salespeople. While many studies document the traditional adoption issues such as resistance, time away from customers, etc. (Andzulis, 2012; Ahearne et al., 2013), research has only recently started investigating the negative impacts of technology on professional salespeople, such as technostress (Tarafdar et al., 2014, 2015). Our investigation of maladaptive technology use behaviors extends this very nascent stream of research into a new conceptual direction by showing that excessive and maladaptive dependence is another potential dark side to the adoption of technology by salespeople. To our knowledge, this is the first reported research to study this phenomenon in the area of professional sales. Next, we show that

maladaptive technology dependence behaviors are important inhibitors of positive salesperson outcomes. Further, we identify antecedents and moderators of maladaptive dependence behaviors, introducing important theoretical areas for researchers to further explore, to advance the understanding of this phenomenon. As a related empirical contribution, we develop a scale to allow measurement of maladaptive technology dependence behaviors. Taken together, we believe that the above represents a new, interesting and relevant theoretical development in the area of technology impacts on professional salespeople and a fruitful area for further research moving forward.

Second, and expanding on the antecedents of maladaptive dependence behaviors, we show that attitudes toward technology, as embodied in the emotional attachment and perceived affordance, as well as relationship management with customers, are important antecedents potentially leading to maladaptive dependence behaviors. What is conceptually interesting is that all of these are *positive attributes* of the salesperson. Thus, through these antecedents, we show that factors that are desirable for the salesperson, also have the undesirable effect of increasing maladaptive dependence behaviors. Third, and focusing on the moderators of the relationships between the antecedents and the maladaptive behaviors, we show that both role stress and a competitive psychological climate play an important role in strengthening these dysfunctional relationships. Again, we note here that both these moderators are *unavoidable attributes* of the salesperson's job. Literature shows that salespeople in general experience high role stress (Wetzels et al., 2000) and that they are psychologically competitive (Schrock et al., 2016). Therefore, through these relationships we show that factors, which are widely prevalent in the working environment of the salesperson, also have the effect of increasing the incidence of maladaptive technology dependence behaviors. Fourth, we show that maladaptive technology

use behaviors can lead to detrimental effects on key aspects of the performance of salespeople in terms of their task completion and teamwork. Overall, therefore, through the above contributions we theoretically enhance the literature by conceptually and empirically examining various aspects of the phenomenon of maladaptive technology dependence of professional salespersons.

In terms of contributions to practice, our study has a number of implications for the management of how the professional sales force uses technology. First, understanding the factors that constitute excessive dependence on technology may assist organizations in creating appropriate strategies to help salespeople counter these factors. Factors such as blind trust, dysfunctional use and overreliance on technology, for example, are potentially changeable through training and education about the healthy and unhealthy uses of technology. Businesses should have a well-documented and well-disseminated technology use policy to foster healthy attitudes that address these factors (Walstrom and Duffy, 2003). Training of employees should be balanced, showing both the potential drawbacks and benefits of technology, thus giving employees the right perspective on technology (Walstrom and Duffy, 2003). For example, such training could be designed to prevent overreliance and blind trust in technology. By promoting realistic attitudes, expectations and motivations for mobile social networking by salespeople, management could mitigate their maladaptive dependence.

Second, managers should take heed of the factors that enhance maladaptive dependence behaviours. The practical problem is that many of these factors are desirable in salespeople and need to be present to a certain extent, for them to use technology effectively. For example, positive perceptions of technology in the form of high perceived technology affordance or positive emotions toward it, as well as a high propensity for customer relationship management, are all desirable attributes. Therefore, it is difficult to suggest that management should eliminate

26

or indiscriminately reduce these factors. What is more important, therefore, is to communicate to salespeople the potential dark sides of these positive factors in the form of their tendency to increase potentially harmful dependence on technology. For example, sales management needs to also include accurate training and communication about the use of technology for client relationship development and enhancement, and shape realistic technology affordance expectations such that salespeople do not go over-board with these factors. Third, in order to reduce maladaptive dependence behaviors, managers should strive to create a healthy work environment with low competitive psychological climate and low role stress. In some industries, creating a competitive environment is encouraged. However, if maladaptive dependence behaviors become problematic, this may need to be curtailed. Managers must therefore be proactive in creating a positive work environment for their salespeople to help offset negative effects of dependency on social networking applications. Fourth, maladaptive mobile technology dependence behaviors represent an important issue that sales managers need to pay attention to due to potential implications for job outcomes. Decreased team participation and lower task completion may potentially cause financial losses due to decrease in production, missed deadlines and forced overtime. To the extent possible, sales managers and salespeople should be educated on the topic and be alert to these behaviors from the start. The new measurement scale may help organizations to assess the possible presence of these behaviors in their sales force, and allow interventions to be developed. Further, sales management should be very cautious in selecting social networking applications, and encourage their use to be mindful and specific, rather than random.

6   Future Research Directions and Concluding Remarks

This study investigated maladaptive dependence behaviors associated with the use of mobile

social networking applications. We believe our theorization and empirical results provide a good groundwork for future research. Research going forward can build on our study in two potential directions. First, it would be valuable for future research to study mobile social networks dependency beyond the sales context. Studies could look at the impact of mobile social networking dependency on professionals in other areas such as customer service representatives, since many firms are starting to provide customer service using social media. The sales position is unique in a number of aspects, so the generalizability of this work to other areas should be tested. Further, there are other harmful long-term impacts of mobile social network applications on individual users that could open avenues for future researchers. These include the impact of technology on the user's health and well-being such as work-life balance. Technology use could also have a negative impact on the user's privacy and perception of security. In addition, technology could also harm employee motivation and productivity due to social loafing. Exploring other outcomes associated with maladaptive dependence behaviors associated with social networking technologies, along with potential mitigating moderators, would be a worthwhile endeavor. Future studied could also examine dependencies toward others types of technologies used by salespeople, such as customer relationship management systems and sales force automation technologies, thus developing an understanding of technology dependency across different sales technology platforms.

Finally and in conclusion, technologies such as mobile social media are increasingly being used by professionals in various functions to execute their work tasks. From our study, it is easy to suggest that maladaptive dependence behaviors associated with them should be reduced because they lead to negative work performance outcomes. However, as we also show, a number of antecedents and moderators associated with maladaptive dependence behaviors are positive,

desirable or unavoidable factors that are difficult to eliminate. We thus call for deeper and continued examination of the phenomenon of maladaptive technology dependence behaviors that not only reveals to scholars its complex and nuanced facets, but also presents a realistic challenge for practitioners that needs to be addressed.

References

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: cognitive absorption and beliefs about information technology usage. *MIS Quarterly* 24(4): 665-694.

Agnihotri, R., Kothandaraman, P., Kashyap, R., & Singh, R. (2012). Bringing "social" into sales: the impact of salespeople's social media use on service behaviors and value creation. *Journal of Personal Selling & Sales Management* 32(3): 333-348.

Ahearne, M., Lam, S. K., Hayati, B., & Kraus, F. (2013). Intrafunctional competitive intelligence and sales performance: a social network perspective. *Journal of Marketing* 77(5): 37-56.

Anderson, J. C., Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin* 103(3):453-460.

Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of Organizational Behavior* 19: 235-258.

Andzulis, J., Panagopoulos, N. G., & Rapp, A. (2012). A Review of Social Media and Implications for the Sales Process. *Journal of Personal Selling & Sales Management* 32(3): 305-316.

Ball-Rokeach, S. J. (1985). The origins of individual media-system dependency a sociological framework. *Communication Research 12*(4): 485-510.

Ball-Rokeach, S. J., & DeFleur, M. L. (1976). A dependency model of mass-media effects. *Communication Research* 3(1): 3-21.

Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for internet addiction. *Cyberpsychology & Behavior* 4(3): 377-383.

Benbasat, I. and Wang, W., (2005). Trust in and adoption of online recommendation agents. *Journal of the Association for Information Systems* 6(3): 4.

Bollen, K. A. (1990). Overall fit in covariance structure models: two types of sample size effects. *Psychological Bulletin* 107: 256-259.

Brown, S. P., Cron, W. L., & Slocum Jr, J. W. (1998). Effects of trait competitiveness and perceived intraorganizational competition on salesperson goal setting and performance. *Journal of Marketing* 62: 88-98.

Byrne, B. M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Routledge.

Caplan, S. E. (2002). Problematic Internet use and psychosocial well-being: development of a

theory-based cognitive–behavioral measurement instrument. *Computers in Human Behavior* 18(5):553-575.

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research* 16: 64-73.

Claessens, B. J., Van Eerde, W., Rutte, C. G., & Roe, R. A. (2010). Things to do today...: a daily diary study on task completion at work. *Applied Psychology 59*(2): 273-295.

Daliot-Bul, M. (2007). Japan's mobile technoculture: the production of a cellular playscape and its cultural implications. *Media Culture Society* 29: 954.

Essig, T. (2012). The addiction concept and technology: diagnosis, metaphor, or something else? a psychodynamic point of view. *Journal of Clinical Psychology* 68(11): 1175-1184.

Fournier, C., Weeks, W. A., Blocker, C. P., & Chonko, L. B. (2013). Polychronicity and scheduling's role in reducing role stress and enhancing sales performance. *Journal of Personal Selling and Sales Management* 33(2): 197-210.

Freeman, R. (2009). The Internet: A web of disconnection. *Pacifica Graduate Institute*.

Geiger, S., & Turley, D. (2005). Socializing behaviors in business-to-business selling: an exploratory study from the Republic of Ireland. *Industrial Marketing Management* 34(3): 263-273.

Genova, G. L. 2010. The anywhere office= anywhere liability. *Business Communication Quarterly* 73(1): 119-126.

Giamanco, B., & Gregoire, K. (2012). Tweet me, friend me, make me buy. *Harvard Business Review* 90(7/8): 88-93.

Gibson, J. J. (1986). *The Ecological Approach to Visual Perception*, Hillsdale, NJ: Lawrence Erlbaum Associates

Grant, A. E., Guthrie, K. K., & Ball-Rokeach, S. J. (1991). Television shopping a media system dependency perspective. *Communication Research* 18(6): 773-798.

Hair, J.F., Anderson, R.E., Tatham, R.L., Black, W.C., 1998. *Multivariate data analysis*. 5th ed. Upper Saddle River: Prentice Hall.

Hartson, H. (2003). Cognitive, physical, sensory, and functional affordances in interaction design. *Behavior & Information Technology* 22(5):315.

Hunter, G. K., & Perreault Jr, W. D. (2006). Sales technology orientation, information effectiveness, and sales performance. *Journal of Personal Selling & Sales Management* 26(2): 95-113.

Jolson, M.A. and Wotruba, T.R., (1992). Selling and sales management in action: prospecting: a new look at this old challenge. *Journal of Personal Selling & Sales Management*, *12*(4):59-66.

Keefer, L. A., Landau, M. J., Rothschild, Z. K., & Sullivan, D. (2012). Attachment to objects as compensation for close others' perceived unreliability. *Journal of Experimental Social Psychology* 48(4): 912-917.

Kiessling, T., Harvey, M., & Garrison, G. (2004). The importance of boundary-spanners in global supply chains and logistics management in the 21st century. *Journal of Global Marketing* 17(4): 93-115.

Krishnan, V., Peterson, R. M., & Rodriguez, M. (2012). Social media's influence on business-to-business sales performance. *Journal of Personal Selling and Sales Management* 32(3): 365-378.

Kusari, S., Cohen, D., Singh, J. and Marinova, D., (2005). Trust and control mechanisms in organizational boundary spanners' cognitions and behaviors. *In Academy of Management Proceedings* 1: pp. D1-D6. Academy of Management.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 159-174.

Liu, A. H., & Leach, M. P. (2001). Developing loyal customers with a value-adding sales force: examining customer satisfaction and the perceived credibility of consultative salespeople. *Journal of Personal Selling & Sales Management* 21(2): 147.

Loges, W. E. (1994). Canaries in the coal mine perceptions of threat and media system dependency relations. *Communication Research* 21(1): 5-23.

Lysonski, S. J., & Johnson, E. M. (1983). The sales manager as a boundary spanner: a role theory analysis. *Journal of Personal Selling & Sales Management* 3(2): 8

Magedanz, T. and Simões, J., (2009). What happens when you mix social networks, contexts and mobile advertising in the same glass?. *International Journal of Mobile Marketing 4*(2).

Markus, M., & Silver, M. S. (2008). A Foundation for the study of IT effects: a new look at DeSanctis and Poole's concepts of structural features and spirit. *Journal of the Association for Information Systems* 9(10): 609-632.

Mechanic, D., (1962). Sources of power of lower participants in complex organizations. *Administrative Science Quarterly*, 349-364.

Mirela, P., & Iulia, S. (2013). Emotions in the organizational environment. *Annals of the University of Oradea Economic Science Series* 22(1): 1595-1605.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions

of adopting an information technology innovation. *Information Systems Research* 2(3): 192-222.

Onyemah, V. (2008). Role ambiguity, role conflict, and performance: empirical evidence of an inverted-u relationship. *Journal of Personal Selling & Sales Management* 28(3): 299-313.

Patwardhan, P., & Yang, J. (2003). Internet dependency relations and online consumer behavior: a media system dependency theory perspective on why people shop, chat, and read news online. *Journal of Interactive Advertising* 3(2), 57-69

Ping, R. A., Jr. (1995). A parsimonious estimating technique for interaction and quadratic latent variables. *Journal of Marketing Research*, 32(3), 336–347.

Plouffe, C. R., Nelson, Y. H. and Beuk, F., (2013). Testing an enhanced, process-based view of the sales process. *Journal of Personal Selling & Sales Management 33*(2):141-163.

Podsakoff, P.M., MacKenzi, S.B., Lee, J.Y., Podsakoff, N.P., (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88(5): 879–903.

Rapp, A., Panagopoulos, N. G., & Andzulis, J. M. (2012). A review of social media and implications for the sales process. *Journal of Personal Selling and Sales Management* 32(3): 305-316.

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly* 150-163.

Rodriguez, M., Peterson, R. M., & Krishnan, V. (2012). Social media's influence on business-to-business sales performance. *Journal of Personal Selling & Sales Management* 32(3):365-378.

Schrock, W. A., Hughes, D. E., Fu, F. Q., Richards, K. A. & Jones, E. (2016). Better together: trait competitiveness and competitive psychological climate as antecedents of salesperson organizational commitment and sales performance. *Marketing Letters* 27 (2): 351-360.

Seppala, P. (2001). Experience of stress, musculoskeletal discomfort, and eyestrain in computer-based office work: a study in municipal workplaces. *International Journal of Human-Computer Interaction* 13: 279–304.

Shaffer, H.J., Hall, M.N., & VanderBilt, J. (2000). Computer addiction: a critical consideration. *American Journal of Orthopsychiatry* 70:162–168.

Shu, Q., Tu, Q., & Wang, K. (2011). The impact of computer self-efficacy and technology dependence on computer-related technostress: A social cognitive theory perspective. *International Journal of Human-Computer Interaction* 27(10): 923-939.

Stone, G., & Stone, D. (1990). Lurking in the literature: another look at media use habits. *Mass Communications Review* 17:25–33.

Sun, S., Rubin, A. M., & Haridakis, P. M. (2008). The role of motivation and media involvement in explaining Internet dependency. *Journal of Broadcasting & Electronic Media* 52(3): 408-431.

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2014). Examining impacts of technostress on the professional salesperson's behavioural performance. *Journal of Personal Selling & Sales Management 34*(1), 51-69.

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal 25*(2), 103-132.

Thompson, T. M., & Bluvshtein, N. E. O. (2008). Where technology and the workplace collide: an analysis of the intersection between employment law and workplace technology. *Privacy & Data Security Law Journal* 3(4): 283-299.

Thomson, M., MacInnis, D. J., & Park, C. (2005). The ties that bind: measuring the strength of consumers' emotional attachments to brands. *Journal of Consumer Psychology* 15(1):77-91.

Toms, E. G., Villa, R., & McCay-Peet, L. (2013). How is a search system used in work task completion? *Journal of Information Science* 39(1): 15-25.

Trainor, K. J. (2012). Relating social media technologies to performance: a capabilities-based perspective. *Journal of Personal Selling and Sales Management* 32(3): 317-331.

Tsai, J. P., & Ho, C. F. (2013). Does design matter? affordance perspective on smartphone usage. *Industrial Management & Data Systems* 113(9):1248-1269.

Turkle S. (2011). *Alone together: why we expect more from technology and less from each other*. New York: Basic Books.

Walstrom, K. A. and Duffy, T. J., (2003). Implications regarding computer technology attitudes of new employees. *Information Systems Management 20*(2): 26-31.

Weiser, E. B. (2001). The functions of Internet use and their social and psychological consequences. *CyberPsychology & Behavior* 4(6): 723-743.

Wetzels, M., de Ruyter, K. and Bloemer, J. (2000), Antecedents and consequences of role stress of retail sales persons. *Journal of Retailing and Consumer Services* 7: 65-75.

Yang-Hwan, L. (2008). Individual media dependency (IMD) and social networking website: exploring relations between motivational dimensions of IMD and SNW use. *Conference Papers -- International Communication Association* 1-31.

Young, K. (2010). Killer surf issues: crafting an organizational model to combat employee internet abuse. *Information Management Journal* 44(1): 34-38.

Zhang, Y., & Begley, T. M. (2011). Power distance and its moderating impact on empowerment and team participation. *International Journal of Human Resource Management* 22(17): 3601-3617.

Appendix. Scales from the literature adapted for the study.

A) Personal antecedents:
- Emotional attachment (Thomson et al, 2005):

The extent to which the following words describe your typical feelings toward mobile social networks technology:
- ✓ Friendly
- ✓ Connected
- ✓ Attached

- Perceived technology Affordance

Diversity of features (Tsai and Ho, 2013), a five-point scale (1 = "strongly disagree," 5 = "strongly agree").
- ✓ Having more operation mode choices can help me complete my work faster.
- ✓ Having more operation mode choices can allow me to select the proper mode so as to reduce errors in my work.
- ✓ A greater selection of operation modes would allow me to interact with the mobile social networks application more easily.
- ✓ A greater selection of operation modes would allow me to operate the mobile social networks application more easily.

Diversity of tasks (Campion et al, 1993), a five-point scale (1 = "strongly disagree," 5 = "strongly agree").
- ✓ Mobile social network applications give me a chance to learn about a variety of different tasks
- ✓ Mobile social network applications give me a chance to do more interesting tasks
- ✓ Mobile social network applications enable me perform different tasks to keep up with the day-today needs of my work.

B) Job related antecedents

- Prospecting motivation (Rodriguez et al, 2012)

Mobile social network applications are:
- ✓ Part of a formalized value proposition that is very compelling to our prospects.
- ✓ Part of specific criteria established to define an acceptable prospect for our company.
- ✓ Important in providing salespeople with a solid understanding of our customers' business needs.
- ✓ Helpful in making the salesperson consistently follow a standardized process to qualify opportunities.
- ✓ Important in holding the salesperson accountable for converting leads to closed business

- Relationship management motivation (Plouffe et al 2013),

What kind of "overall" impression do your customers make on you when you communicate with them using mobile social media? (Anchors are: 1 "Extremely negative," to 4 "Neither negative nor positive," to 7 "Extremely positive")
- ✓ How satisfied are you with your customer relationships as a result of your use of mobile social networks? (anchors are: 1 "Not at all," to 4 "Moderately," to 7 "Perfectly")

- ✓ Do mobile social networks communications make you trust your customers? (anchors are: 1 "Not at all," to 4 "Moderately," to 7 "Perfectly")
- ✓ Do mobile social networks communications build a good foundation for a future relationship with your customers? (anchors are: 1 "Not at all," to 4 "Moderately," to 7 "Perfectly")

C) Moderating role of organizational environment

- Competitive Psychological climate (Brown et al, 1998)
- ✓ My manager frequently compares my results with those of other salespeople
- ✓ The amount of recognition you get in this company depends on how your sales rank compared to other salespeople
- ✓ Everybody is concerned with finishing at the top of the sales rankings
- ✓ My co-workers frequently compared their results with mine

- Role stress(Rizzo et al., 1970)
- ✓ I know exactly what is expected of me. (R)
- ✓ I know what my responsibilities are. (R)
- ✓ Explanation is clear of what has to be done. (R)
- ✓ I have clear, planned goals and objectives for my job. (R)
- ✓ I feel certain about how much authority I have. (R)
- ✓ I have to do things that should be done differently.
- ✓ I have to break or bend a rule or policy in order to carry out an assignment.
- ✓ I work with two or more groups who operate quite differently.
- ✓ I do things that are readily accepted by one person and not accepted by others.
- ✓ I do not have adequate resources and materials to execute my job.

D) Impact of maladaptive technology behaviors on salesperson's performance

- Team participation (Anderson and West, 1998)
- ✓ How worthwhile do you think these objectives are to your team?
- ✓ We share information generally in the team rather than keeping it to ourselves
- ✓ We have a `We are in it together' attitude
- ✓ We all influence each other
- ✓ People keep each other informed about work-related issues in the team
- ✓ People feel understood and accepted by each other
- ✓ Everyone's view is listened to even if it is in a minority
- ✓ There are real attempts to share information throughout the team
- ✓ There is a lot of give and take

- Task completion (Claessens et al, 2010)

I have focused on finishing tasks based ---------- % of the, (fill out a percentage from 0-100)

- ✓ Tasks that be done now and cannot be done after today without consequences.
- ✓ Tasks are important in the eyes of my supervisor
- ✓ Task are fun to execute

Table 1.
Exploratory factor analysis for maladaptive technology dependence behaviors

Items	Component					Cronbach's Alpha
	1	2	3	4	5	
a) Temporal immersion						0.921
Time appears to go by very quickly when I am using the Mobile social networks technology.		.819				
Sometimes I lose track of time when I am using mobile social networks technology.		.832				
Time flies when I am using the mobile social networks technology.		.876				
While using the Mobile social network media, I am absorbed in what I am doing.		.713				
While using mobile social networks technology, I am immersed in the task I am performing.		.707				
b) Heightened enjoyment and curiosity						
I have fun interacting with mobile social networks technology	.770					
I enjoy using mobile social networks technology.	.773					
Using mobile social networks technology excites my curiosity.	.886					
Interacting with mobile social network technology makes me curious.	.891					
Using mobile social networks technology arouses my imagination.	.824					
c) Dysfunctional use						
I play games using mobile social networks technology during work hours.			.760			
I use mobile social networks technology for dating during work hours.			.583			
I chat with friends and family using mobile social networks technology during work hours.			.791			
I have been caught using mobile social networks technology for personal reasons during work hours.			.814			
It is acceptable to me to use mobile social networks technology for entertainment during work hours.			.760			
d) Blind trust						
These mobile social networks technology keep my interests in mind.					.772	
These mobile social networks technology provide unbiased information (such as product recommendations).					.912	
These mobile social networks technology provide correct information.					.851	
e) Overreliance						
My work is done more than 80% mobile social networks technology.				.739		
All of information transferring is carried out by mobile social networks technology in my organization.				.900		
All of knowledge sharing is carried out by mobile social networks technology in my organization.				.892		

Table 2.
Confirmatory factor analysis for maladaptive technology dependence behaviors

Label	Description of the items	Factor analysis 1st order (initial)	Factor analysis 2nd order	Fit indices
1) <u>Cognitive absorption</u>				
a) Temporal immersion				
	Time appears to go by very quickly when I am using the Mobile social media applications.	0.86	0.67	GFI=1
	Sometimes I lose track of time when I am using mobile social media applications.	0.84		CFI=1
	Time flies when I am using the mobile social media applications.	0.94		NFI= 1
	While using the Mobile social network media, I am absorbed in what I am doing.	0.66		IFI=1
	While using mobile social media applications, I am immersed in the task I am performing.	0.62		
b) Heightened enjoyment and curiosity				
	I have fun interacting with mobile social media applications.	0.89	0.81	
	Using mobile social media applications provides me with a lot of enjoyment.	0.79		
	I enjoy using mobile social media applications.	0.88		
	Using mobile social media applications excites my curiosity.	0.88		
	Interacting with mobile social media applications makes me curious.	0.85		
	Using mobile social media applications arouses my imagination.	0.77		
2) <u>Dysfunctional use</u>				
	I play games using mobile social media applications during work hours.	0.75	N/A	GFI=0.97
	I use mobile social media applications for dating during work hours.	0.61		CFI= 0.97
	I chat with friends and family using mobile social media applications during work hours.	0.64		NFI= 0.96
	I have been caught using mobile social media applications for personal reasons during work hours.	0.83		IFI=0.97
	It is acceptable to me to use mobile social media applications for entertainment during work hours.	0.69		
3) <u>Blind Trust</u>				
	These mobile social media applications keep my interests in mind.	0.54	N/A	GFI=0.98
	These mobile social media applications provide unbiased information (such as product recommendations).	0.73		CFI= 0.99
				NFI= 0.98
	These mobile social media applications provide correct information.	0.90		IFI=0.99
	I trust the information provided by these mobile social media applications.	0.89		
4) <u>Overreliance</u>				
	Mobile social media applications have replaced most major communication devices in the office.	0.73	N/A	GFI=0.97
				CFI= 0.98
	It is difficult to imagine my work without mobile social media applications.	0.47		NFI= 0.98
	My work is done more than 80% mobile social media applications.	0.80		IFI=0.98
	All of information transferring is carried out by mobile social media applications in my organization.	0.92		
	All of knowledge sharing is carried out by mobile social media applications in my organization.	0.95		

Model fit for the entire model 1st iteration without using modification indices: CFI=0.82 GFI=0.73   IFI=0.82
Model fit for the entire model 2nd iteration after using modification indices: CFI=0.91 GFI=0.81 IFI=0.91

Table 3.
Reliability and discriminant validity for maladaptive dependence behaviors dimensions

	CR	AVE	MSV	ASV	Cognitive Absorption	Dysfunctional Use	Blind Trust	Overreliance
Cognitive Absorption	0.715	0.558	0.315	0.191	0.747			
Dysfunctional Use	0.834	0.504	0.192	0.138	0.350	0.710		
Blind trust	0.854	0.603	0.315	0.179	0.561	0.314	0.776	
Overreliance	0.915	0.730	0.192	0.151	0.370	0.438	0.351	0.855

Table 4.
Factor analysis for all the model constructs taken from literature

Description of the item	Loading	Fit index
1) Emotional attachment		CFI=1
Describe your typical feelings toward mobile social / media applications. -Friendly	0.77	GFI=1
describe your typical feelings toward mobile social / media applications. – Connected	0.88	IFI=1
describe your typical feelings toward mobile social / media applications. -Attached	0.65	
2) Perceived technology affordance		
A) Feature Diversity		GFI=0.79
Having more mobile social media feature options helps me complete my work faster.	0.91	CFI= 0.82
Having more feature options allows me to reduce errors in my work.	0.89	NFI= 0.81
A good selection of feature choices allows me to interact with the mobile social media application more easily.	0.74	IFI=0.82
Having more feature options allows me to select the proper sales mode.	0.80	
B) Task Diversity		
Mobile social media applications give me a chance to learn about a variety of different tasks	0.94	GFI=1
Mobile social media applications give me a chance to do more interesting tasks.	0.87	CFI= 1
		NFI= 1
		IFI=1
3) Prospecting motivation : I use Mobile Social Media Apps		
To develop compelling value propositions compelling for our prospects.	0.80	CFI=0.96
As an essential part of criteria established to define an acceptable prospect for our company.	0.83	GFI=0.96
To convert leads to closed business.	0.72	IFI=0.96
To develop compelling value propositions compelling for our prospects.	0.80	
4)Relationship management motivation		
What "overall" impression do your customers have about your organization when you communicate with them using mobile social media?	0.56	CFI=0.96
How satisfied are you with your customer relationships as a result of your use of mobile social media applications	0.87	GFI=0.96
Do mobile social media communications enable you to trust the information provided by your customers?	0.77	IFI=0.96
Do mobile social media communications build a good foundation for a future relationship with your customers	0.84	
5) Competitive psychological climate		
My manager frequently compares My results with those of other salespeople in My organization	0.70	CFI=0.98
The amount of recognition I get in this company depends on how my sales rank compares to other salespeople.	0.65	GFI=0.98
Every sales person in my organization is concerned with finishing at the top of the sales rankings.	0.59	IFI=0.99
My co-workers frequently compare their results with mine.	0.81	
6) Role Stress		
I have to do things that should be done differently.	0.63	CFI=0.72
I have to break or bend a rule or policy in order to carry out an assignment.	0.58	GFI=0.96
I work with two or more groups who operate quite differently.	0.60	IFI=0.91
I do things that are readily accepted by some colleagues and not accepted by others.	0.65	
7) Team participation		
We share information generally in the team rather than keeping it to ourselves	0.80	CFI=0.96

Table 4 Continued.

Factor analysis for all the model constructs taken from literature

Description of the item	Loading	Fit Index
We have a "We are in it together' attitude".	0.90	GFI=0.94
We positively influence one another.	0.87	IFI=0.96
We keep one another informed about work-related issues in the team.	0.83	
We feel understood and accepted by each other.	0.80	
Everyone's view is listened to even if it is in a minority.	0.63	
There are real attempts to share information throughout the team.	0.80	
8) Task Completion		
I focus on finishing ---------- % of the (0-100 / percent) tasks that have to be done now and cannot be done after today without consequences	0.82	CFI=1 GFI=1
I focus on finishing those tasks ---------- % (/ 0-100 percent) that are important in the / eyes of my supervisor	0.79	IFI=1
I focus on finishing ----------% (0-100 / percent) of the tasks that are fun to execute	0.23	

Table 5.
Results of the hypotheses testing

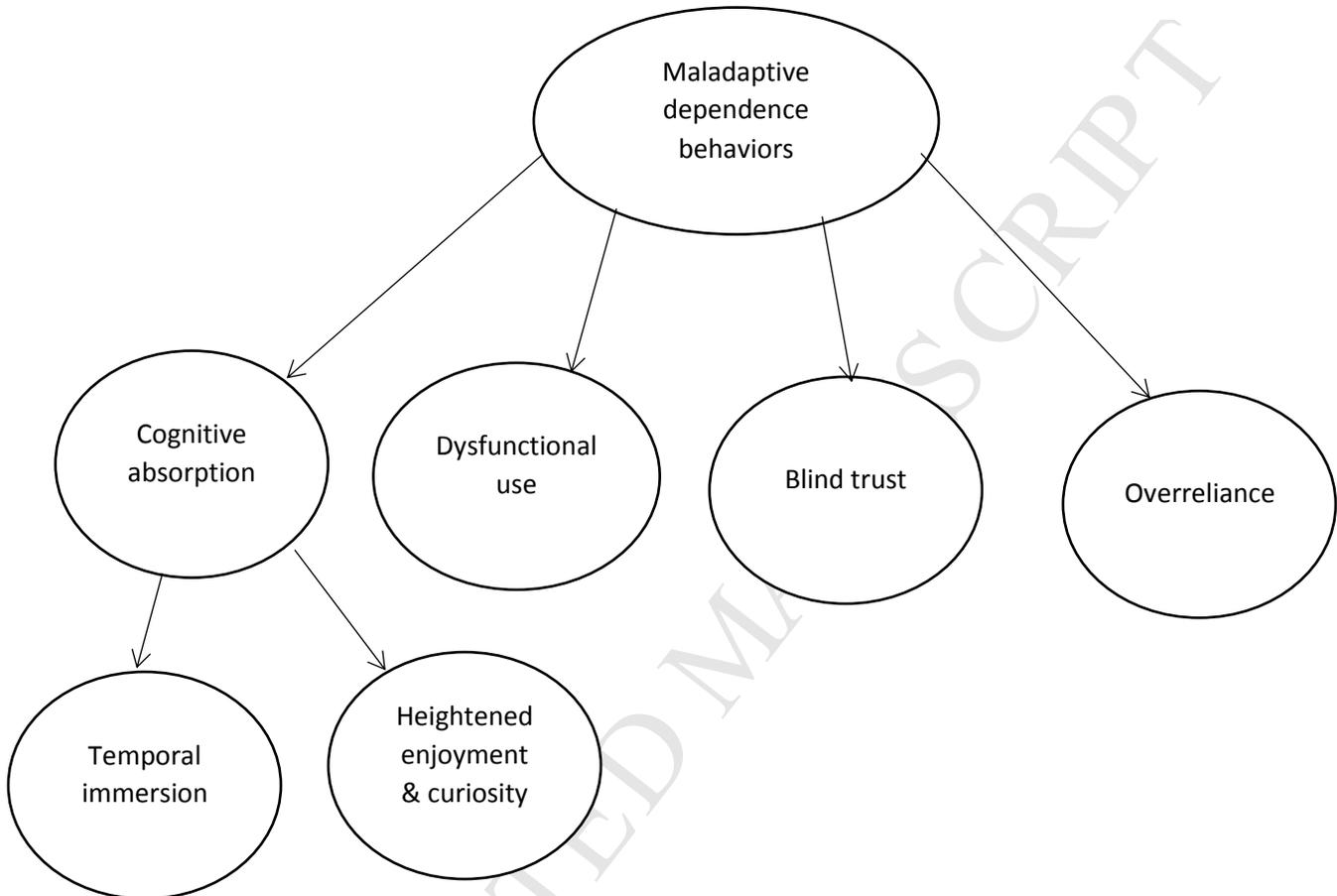| Hypothesis	P-value	Beta-value	Significance
H1: Greater emotional attachment is positively related to maladaptive dependence behaviors.	***	0.748	Significant and supported
H2: The higher the perceived technology affordance, the higher the maladaptive dependence behaviors.	***	0.329	Significant and supported
H3a: The higher the prospecting motivation, the higher the maladaptive dependence behaviors	0.192	-0.040	Not Significant and not supported
H3b: The higher the relationship management motivation, the higher the maladaptive dependence behaviors	***	0.226	Significant and supported
H4a: Competitive psychological climate positively moderates the relationship between emotional attachment and maladaptive technology behaviors.	0.032	0.110	Significant and supported
H4b: Competitive psychological climate positively moderates the relationship between perceived technology affordance and maladaptive technology behaviors.	***	0.348	Significant and supported
H5a: Role stress positively moderates the relationship between prospecting and maladaptive technology behaviors	0.06	0.094	Not Significant and not supported
H5b: Role stress positively moderates the relationship between relationship management and maladaptive technology behaviors	***	0.519	Significant and supported
H6a: The higher the maladaptive dependence behaviors, the lower the team participation.	0.003	-0.290	Significant and supported
H6b: The higher the maladaptive dependence behaviors, the lower the task completion.	0.027	-4.28	Significant and supported

Figure 1.

Components of the maladaptive technology dependence behaviors construct

Figure 2.
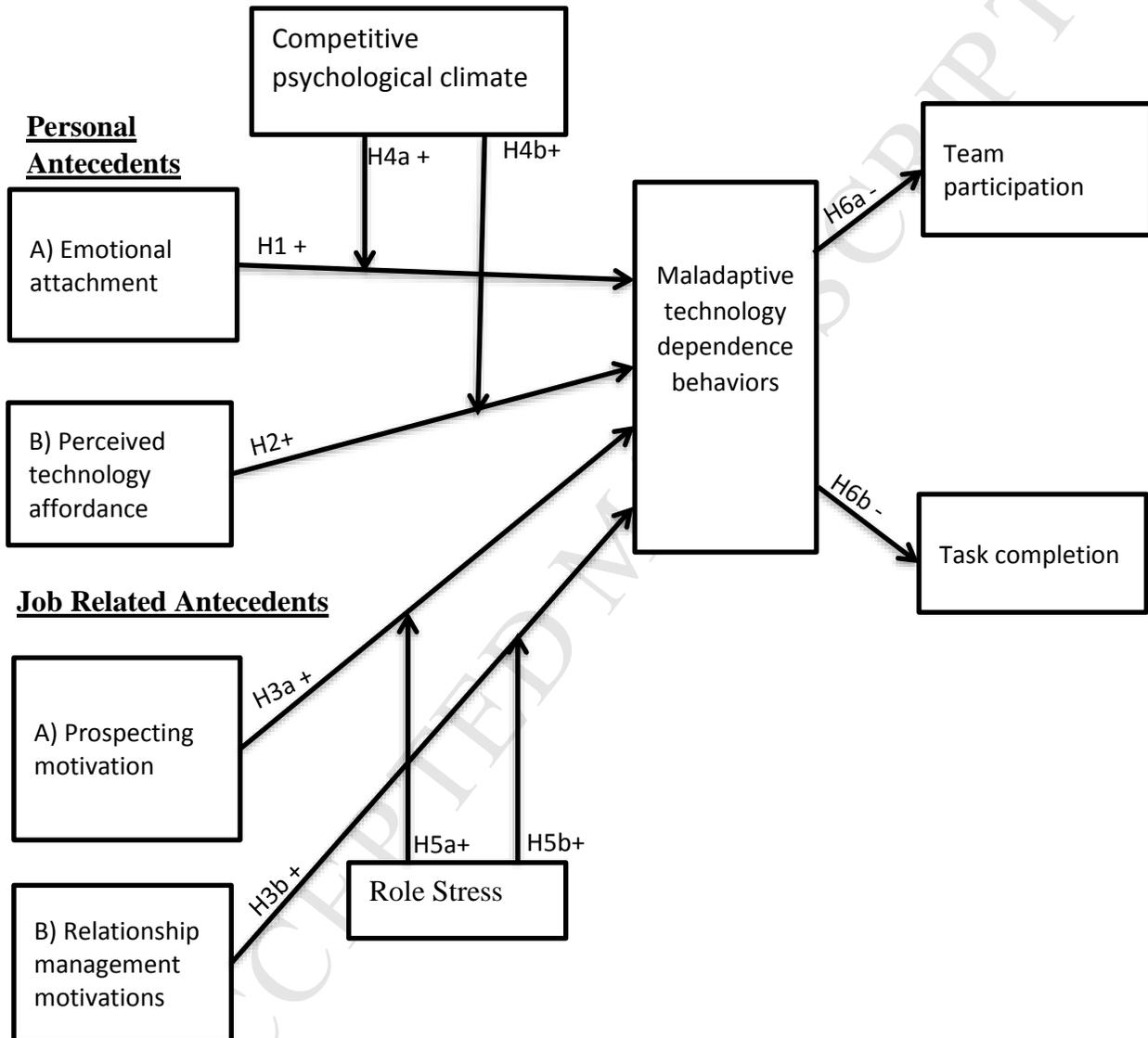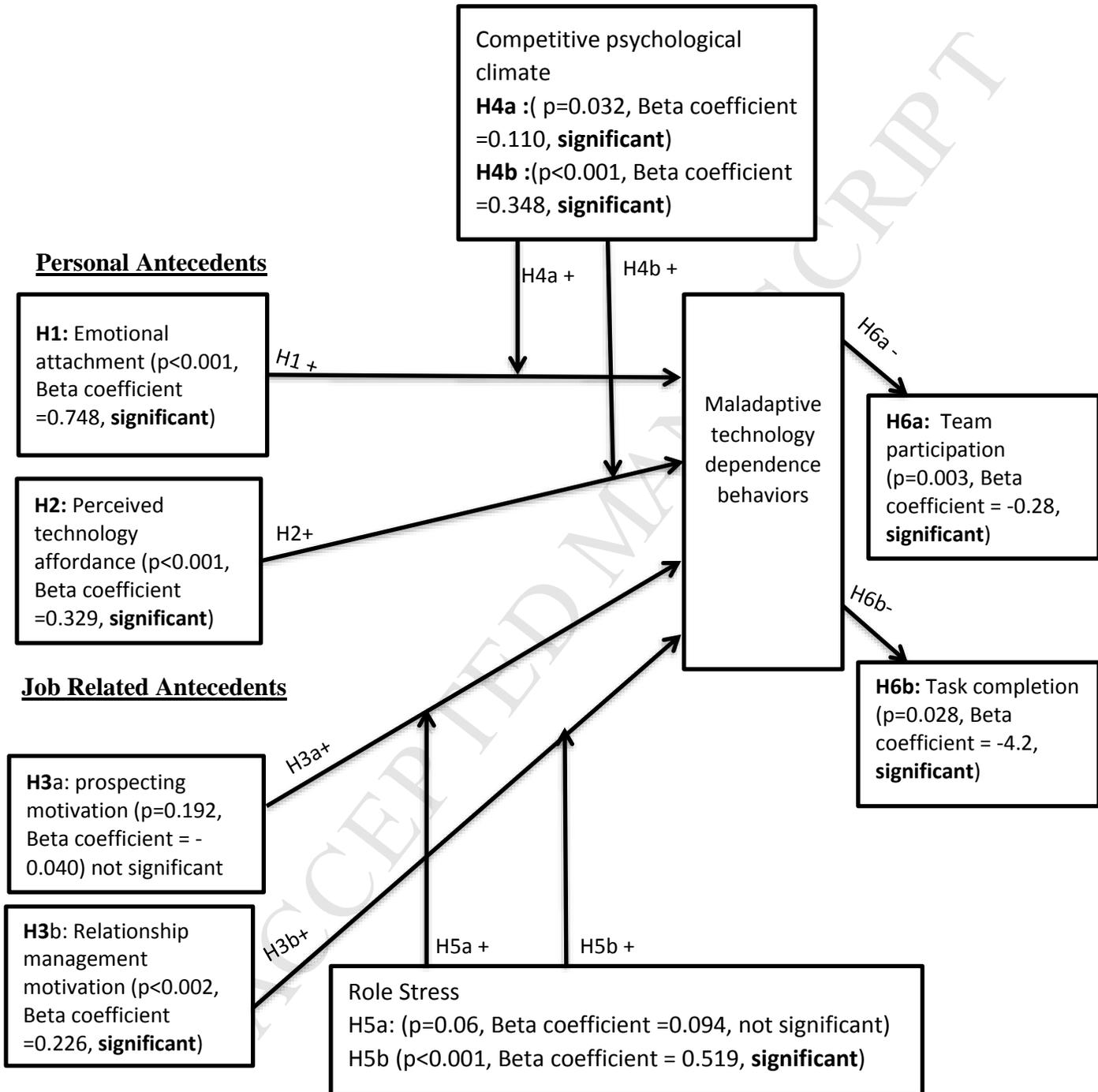
Proposed theoretical framework

Figure 3.

Results of hypotheses testing

Highlights

- A new construct of maladaptive technology dependence behaviors (MTDB) is developed
- Media system dependency theory is used to propose a theoretical framework
- Antecedents and consequences of MTDB are tested in the context of sales profession
- Practical implications for organizational use of mobile social networking are offered
- Directions for future maladaptive technology research are suggested