***The power of LinkedIn: Will professionals leave their organizations for professional advancement due to their use of LinkedIn?***

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**Abstract**

With the growth of Web 2.0, social network sites have been created for various purposes for a wide spectrum of users. Creating a digital footprint has become imperative, especially for professionals seeking career development and professional advancement. This study explores professionals’ intention to leave an organization for professional advancement (ILPA) based on their use of a professional social network site, LinkedIn. Our framework leverages self-determination theory (SDT) to demonstrate why professionals use this online social networking. To validate our theoretical framework, 379 randomly selected active LinkedIn users completed an online questionnaire. The extent to which using LinkedIn influences ILPA is examined and the results support all our hypotheses. Our post-hoc analysis indicates strong relationships between need support and motivations of participating LinkedIn. We attempt to explain the findings by using the time perspective concept. This study is also of practical value to companies seeking to set policies to retain professionals. Implications for theory and practice are discussed.

**Keywords:** self-determination theory, time perspective concept, turnover intention, professional advancement, LinkedIn.

**Introduction**

LinkedIn, regarded as the Facebook for professionals, is a platform for job search and network building. As of September 2016, LinkedIn reported to have more than [460 million](http://en.wikipedia.org/wiki/List_of_virtual_communities_with_more_than_100_million_active_users) registered users from over 200 countries and its membership continues to grow year after year. Global Talent Trends stated that 75% of LinkedIn users who changed their jobs did so through the very same platform in 2015. Kasprzak (2012) cited how using LinkedIn to advance one’s career and Baruffaldi et al. (2017) also suggested how important social networking sites are for career development. According to CareerBuilder-Harris poll of 2,000 U.S. HR managers from various industries in 2015 (Olivera, 2015), more than one third of employers said they would not consider interviewing a candidate if no online information could be found. Professionals realize that their digital footprint has become crucial. As participating in LinkedIn to achieve career advancement seems fruitful and rewarding, more and more professionals have now signed up for LinkedIn to take advantage of the platform not only to look for job opportunities, but also to build professional networks and acquire the latest industry information. Although LinkedIn is one of the most popular professional network sites for job seekers and recruiters, not all LinkedIn participants feel the urge to change jobs immediately, some may only aim at opening the opportunity for finding a new job in the long run or create a profile for professional network expansion, which might inadvertently lead to job change eventually. Though professionals’ motives to participate in LinkedIn may vary from one person to another, an overwhelming 90% of professionals said they are open to hear about new job opportunities in the Talent Trends 2016.

Addressing LinkedIn, Steel (2002) reflected on the evolution of the job search process, with professionals moving from passive scanning of the labor market to active solicitation of employers. In line with one of the 21st century’s turnover theories and research trends as coined by Hom et. al. (2017), it is common for job seekers to progressively acquire labor market information, gain feedback about job prospects and thus their employability. Through the growth of web 2.0/3.0 technology over the past decades, thousands of online social network sites have been created not only for leisure and personal development, but also for professional advancement. Job search processes are evolving and progressing in parallel with technology. With the increasing popularity of LinkedIn, it is noteworthy to investigate and enhance how turnover in modern days is being influenced by participating in a professional network site, as it may alter the entire global job market landscape and mechanism, if it has not already done so. In essence, our study aims to contribute to the literature by investigating the relative importance of professional development and advancement through participating in an online professional social media.

According to the unfolding model (Lee & Mitchell, 1994), a person who is inclined for professional advancement and the existence of alternatives likely injects towards intention to leave an organization for professional advancement (ILPA), which refers to the intention of a professional to leave an organization for another organization for the sake of his/her advancement in the profession (Cho and Huang, 2012). ILPA is inarguably one prominent type of turnover among professionals. Retain talents is important as profession turnover can be very expensive and disruptive for an organization (Pfeffer, 2005). As professionals are essential employees in the new knowledge economy, the ability to understand and to manage turnover would have significant results on an organization’s competitive advantage. As such, this study intends to understand whether and if so how participating in LinkedIn would influence professionals’ intention to leave an organization for professional advancement (ILPA).

Using Self-Determination Theory (SDT) as our framework, we explore how professionals’ basic psychological needs are supported and hence trigger the corresponding motivations that lead to ILPA through LinkedIn participation. A number of recent studies have adopted SDT to predict online gaming addiction, e-learning tool adoption, and dental home care and treatment behavior (Neys et al., 2014; Roca & Gagne, 2008; Halvari et al., 2013), but very few have explored SDT on social networking of professionals. This study contributes to the SDT literature by examining how a professional social media site, LinkedIn, influences professionals’ career advancement, and if professionals behave and are motivated in line with other social media intended for leisure and personal aspects.

Furthermore, we conduct a post-hoc analysis to demonstrate that each of the three basic psychological needs and motivations according to the SDT model could be time relevant and that such time relevancy plays an important role impacting one’s behaviors and leading outcomes. Many researchers to date have only concentrated on the connections between time perspective and motivational regulations while excluded the three basic psychological needs (Nuttin & Lens, 1985; Mouratidis & Lens, 2015). How time perspectives relate to and influence the support of the three needs together with the corresponding motivations has not been much explored and remains unclear. Our post-hoc analysis hence provides new insights into the connections between the time perspective concept and the full SDT model, thereby encouraging further investigations in the future.

Lastly, with respect to commercial practice, we ask how influential LinkedIn is for professionals and for organizations, i.e. if the ease of using online social networking causes increasing organization and individual mobility. Whether the increased organization and individual mobility are beneficial or harmful, our findings may help the senior executives of organizations understand how using LinkedIn affects a professional’s ILPA and to identify any measures to minimize costly turnover.

In the following sections, we provide a rationale underlying our framework background, and develop theoretical arguments supporting each of the hypothesized relationships. We begin by describing how SDT is used as an overarching framework to demonstrate how the three basic psychological needs and motivations are fulfilled through professionals’ participation in LinkedIn that this in turn affects ILPA. Finally, the post-hoc analysis presents arguments examining the relevancy of time perspective for professionals’ motivation and hence behavior to participate in LinkedIn, which might affect their ILPA.

**Framework Background & Hypothesis Development**

A central tenet of SDT is that human beings have three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 1985, 1991, 2000). Individuals perform and persevere better in activities when these three basic needs are satisfied (Deci et al., 2001). In this vein, support for these three needs is essential to individuals’ motivation. There are two major types of motivation in performing a task, intrinsic motivation and extrinsic motivation, and there are various regulatory processes along the intrinsic and extrinsic motivation continuum. Intrinsic motivation refers to the willingness to do a task because of a person’s own interests and values. When intrinsically motivated, a person engages in an activity fully for the enjoyment and excitement it brings.

The adoption of intrinsic motivation or the internalization of self-determined types of extrinsic motivation, namely, integrated regulation and identified regulation, depends on the extent to which the support of the three basic needs is met (Deci & Ryan, 1985). When people internalize external requirements, they feel more self-determined and self-motivated. They feel as though their behavior originates from their sense of self. In this study, however, we exclude both the integrated and identified regulations, as previous studies had difficulty separating integrated regulation from identified regulation and intrinsic motivation (Gagne et al., 2010). Malhotra, Galletta, and Kirsch (2008) found that both identified regulation and intrinsic motivation are associated with feelings of volition and are often perceived as the “origin” of behavior. As such, the three motivations (intrinsic motivation, identified regulation, and integrated regulation) seem indistinguishable, and we thus consider only intrinsic motivation in this study.

The two least self-determined types of extrinsic motivation on the continuum, external regulation and introjected regulation, require little to no internalization. Introjected regulation pressures people to act in such a way as to feel worthy, and use ego involvement to buttress their fragile selves (DeCharms, 1968; Ryan, 1982). When a person is externally regulated, he/she acts with the intention of obtaining a desired consequence or avoiding an undesired one, so he/she is spurred to action only when the action is instrumental to those ends. Our proposed framework is illustrated in Figure 1 and described in detail in the following.

(Insert Figure 1 here)

Perceived autonomy support refers to perceived support for control over career planning and development from people’s use of LinkedIn. When professionals are accepted into a discussion group or other communication channels in LinkedIn, they feel that they can trust the other professionals and share with them the latest industry and market information. These open and self-initiated exchanges offer professionals new choices and options. Moreover, LinkedIn provides a platform for industry influencers (e.g., Meg Whitman or Bill Gates) to publish their views on and visions for their industry. This attracts followers to stay on LinkedIn (Kaufman, 2013). The continual inflow of information and knowledge gain from various publications, in addition to the exchanges within discussion groups give professionals new choices and options for their career planning and development and help them derive a sense of satisfaction from their LinkedIn use. As such, we claim that professionals receiving autonomy support are intrinsically motivated to use LinkedIn.

Perceived competence support refers to perceived support for sharpening and recognizing skills and competence from using LinkedIn. In a competence-supporting environment, a person is given the opportunity to demonstrate his/her skills. For instance, professionals can deliberately design their profiles and upload their resumes to display their work and experience and can view each other’s profiles. They can also endorse others’ skills and add remarks to enrich each other’s profiles. Moreover, LinkedIn has been viewed as a hub for professional information, as many published articles are available to its members. Through open and self-initiated exchanges with others in LinkedIn’s discussion groups and other communication channels, professionals can enhance their existing skills and develop new ones for their own tasks. Hence, feelings of competence are fostered and the use of LinkedIn is intrinsically motivated out of professionals’ own interests.

Perceived relatedness support refers to perceived support for building connections and receiving social support through LinkedIn use. When a person is engaged in a relatedness-support environment, acknowledgement, positive regards, caring, and interest in one’s own experience are emphasized (Roca & Gagne, 2008). Similar to other social networking sites, a professional can publish a post and update his/her LinkedIn homepage, which may receive numerous “likes” and positive feedback from others. This connection provides people with identity and helps them to feel valued and part of a community. In this regard, relatedness support is attained and a sense of closeness and belonging is nurtured. According to Ryan and Deci (2001), relatedness is a strong predictor of psychological well-being, and this feeling intrinsically motivates professionals to use LinkedIn out of enjoyment. Hence, we hypothesize the following:

*H1a: Perceived autonomy support has a positive influence on intrinsic motivation for using LinkedIn.*

*H1b: Perceived competence support has a positive influence on intrinsic motivation for using LinkedIn.*

*H1c: Perceived relatedness support has a positive influence on intrinsic motivation for using LinkedIn.*

A professional’s LinkedIn use may be enjoyable or uninteresting depending on the professional’s own agenda. Meeting other professionals, gaining information, and learning knowledge can be fun and rewarding, while job seeking, posting resumes, and updating profiles can be tedious and uninteresting. In terms of SDT, if a person loses interest in an activity, he/she must be extrinsically motivated to continue (Ryan & Deci, 2000).

Some professionals feel obliged to use LinkedIn because they do not want to miss out on opportunities to enhance their autonomy in career planning and development. Others become involved in LinkedIn to show that they are competent and in order to receive recognition as well as learn from others. Still, others worry about lagging behind and being considered inferior to others; hence, their LinkedIn use is subject to introjected regulation.

LinkedIn encourages professionals to connect and build networks with others, but to build direct connections, invitations must be sent to others. Typically, invitations are not being accepted unless the professionals know each other, whether as schoolmates, colleagues, or acquaintances. As such, we argue that professionals are not obliged to use LinkedIn to build networks with others. Hence, we hypothesize the following:

*H2a: Perceived autonomy support has a positive influence on introjected regulation for using LinkedIn.*

*H2b: Perceived competence support has a positive influence on introjected regulation for using LinkedIn.*

*H2c: Perceived relatedness support has no effect on introjected regulation for using LinkedIn.*

People may become involved in an activity to gain something or because they are required to participate (McLean et al., 2003; Niemiec & Ryan, 2009). The exchanges in discussion groups and influencers’ views are helpful for providing choices, options, and the latest knowledge and skills for career development and advancement. As such, we propose that some professionals are externally regulated to use LinkedIn.

Similar to the argument in hypothesis 2c, professionals may feel that they are being penalized for not using LinkedIn because they may have already established connections with others outside LinkedIn. Therefore, using LinkedIn to share with other professionals to gain social support for career development and advancement becomes secondary. Hence, we hypothesize the following:

*H3a: Perceived autonomy support has a positive influence on external regulation for using LinkedIn.*

*H3b: Perceived competence support has a positive influence on external regulation for using LinkedIn.*

*H3c: Perceived relatedness support has no effect on external regulation for using LinkedIn.*

LinkedIn enables its members to search for employment opportunities, to research companies and industries, and to post profiles and resume information (Bradley, 2011). Professionals can promote and market themselves through various channels, such as their profile page. In addition, the ongoing interactions and exchanges within the discussion groups enable professionals to establish connections with others and attract potential recruiters. These benefits apply to those who are intrinsically motivated to use LinkedIn, those who are motivated in an introjected manner to use LinkedIn to avoid missing out on opportunities, and those who are externally motivated to use LinkedIn to enhance their career development.

In this regard, we argue that professionals who are triggered by intrinsic motivation, introjected regulation, or external regulation to use LinkedIn are more likely to enter the job market. Hence it follows that the more frequently professionals use LinkedIn, the higher the probability that they intend to leave their organizations for professional advancement. Hence, we hypothesize the following:

*H4a: Intrinsic motivation for using LinkedIn has a positive influence on ILPA.*

*H4b: Introjected regulation for using LinkedIn has a positive influence on ILPA.*

*H4c: External regulation for using LinkedIn has a positive influence on ILPA.*

**Research Methodology**

***Procedure and participants***

To examine the theoretical model, our target population is professionals who are registered LinkedIn users, active for at least six months, and who are members of at least one discussion group. According to LinkedIn’s rules, a discussion group can have a maximum of 20,000 members. Table 1 shows the 30 discussion groups that were selected; in total, 5,810 professionals were randomly chosen. The number of messages sent to each discussion group was roughly proportional to the number of members in the group. Using the provided LinkedIn communication services, it took almost two months to send the 5,810 inbox messages because LinkedIn only allowed 100 inbox messages to be sent per day; hence, the data collection lasted for seven months, from January 1, 2015 to July 31, 2015.

(Insert Table 1 here)

The inbox message explained the importance and objectives of the survey (Dillman, 2000). A hyperlink leading to an online questionnaire for data collection was included in the message. All collected data were checked for consistency to minimize data entry errors. Out of the 5,810 invitations, 379 questionnaires, a response rate of approximately 6.5 percent, which is comparable with other random sampling studies, were completed by August 1, 2015. Table 2 shows the demographic information of the respondents, including their gender, age, education, income level, number of connections, weekly average LinkedIn use, and number of years as a LinkedIn member. These demographics matched the general population of LinkedIn accordingly to a 2016 Social Media Update by PweResearchCenter (Greenwood et al., 2016); stated over 50% of LinkedIn users are college graduates and post-college graduates, and 45% falls into the income group of $75,000 and above.

(Insert Table 2 here)

***Measurements***

All the constructs in this study were measured by a self-reported questionnaire using a 7-point scale ranging from “highly disagree” (1) to “highly agree” (7). The items used to operationalize the variables in our research model were adapted from prior studies, with some changes in wording to reflect the specific professional context and the technology used by the targeted users.

***Perceived autonomy, perceived competence, and perceived relatedness support***

Four items measuring perceived autonomy support were extracted from the Basic Need Satisfaction at Work Scale (W-BNS, Baard et al., 2004): “Other professionals on LinkedIn give me advice that helps me build a sense of control over my career,” “I can be open about my career aspirations with other professionals on LinkedIn,” “I can trust other professionals in exchanges relating to my career choice when using LinkedIn,” and “Other professionals on LinkedIn provide me with choices and options for my career planning and development.”

To measure perceived competence support, four items were extracted from the same Basic Need Satisfaction at Work Scale (W-BNS, Baard et al., 2004): “I have become masterful in my profession from LinkedIn use,” “I feel competent when receiving endorsements and positive remarks from other professionals on LinkedIn,” “I gain new information and knowledge from other professionals on LinkedIn,” and “I feel that I can develop new skill sets by using LinkedIn.”

To measure perceived relatedness support, another four items were extracted from the Basic Need Satisfaction at Work Scale (W-BNS, Baard et al., 2004): “I feel connected with other professionals when using LinkedIn,” “I feel a sense of belonging with other professionals when using LinkedIn,” “I can share my feelings with other professionals on LinkedIn,” and “Other professionals on LinkedIn care about me, so I don’t feel alone through LinkedIn use.”

***Intrinsic motivation, introjected regulation, and external regulation***

Nine items were adapted to measure intrinsic motivation, introjected regulation, and external regulation (Gagne et al, 2010). To measure intrinsic motivation, the three items were “I use LinkedIn because I enjoy using this social network site very much,” “I use LinkedIn because I have fun using this social network site,” and “I use LinkedIn because I enjoy the moments of pleasure that LinkedIn brings me.”

The three items assessing introjected regulation were “I have to visit LinkedIn because using LinkedIn makes me feel active in developing my career,” “I use LinkedIn because I don’t want to feel stuck in my career if I don’t,” and “I use LinkedIn because my career reputation depends on using it.”

The three items measuring external regulation were “I use LinkedIn because it helps me to build my career path,” “I use LinkedIn because it enables me to meet many people in my profession who can help my career development and advancement,” and “I use LinkedIn because of the benefits of enhancing my career development and advancement.”

***Intention to leave an organization for professional advancement***

To measure ILPA, three items were adapted (Kalbers & Fogarty, 1995; Meyer et al., 1993; Shafer et al., 2002): “I sometimes explore my opportunities for career advancement at other companies,” “I am likely to leave this company for career advancement at another company within the next year,” and “I am likely to leave this company for career advancement at another company within the next two years.”

***Control variables***

In this study, we included numerous control variables that could affect ILPA: affective professional commitment (APC), normative professional commitment (NPC), continuance professional commitment (CPC), affective organization commitment (AOC), normative organization commitment (NOC), continuance organization commitment (COC), actual usage, organization support for development (OSD), age, gender, education, tenure in the profession, and tenure in the current organization.

Three types of professional commitment are considered as controlled factors, as they may affect ILPA. Twelve items regarding these three constructs were extracted following Meyer and Allen (1991). Affective professional commitment (APC) refers to the fact that an employee with a strong sense of belonging to a profession tends to have a high degree of affect and obligation to that profession. There are four items included in this construct: “I would be very happy to spend the rest of my career in my profession,” “I enjoy discussing my profession with people outside it,” “My profession has a great deal of personal meaning for me,” and “I do not feel a strong sense of belonging to my profession.”

Normative professional commitment (NPC) refers to a professional’s feelings of obligation to stay with a profession because it is the right thing to do. It was measured using the following four items: “Jumping from profession to profession does not seem unethical to me,” “I do not believe that a person must always be loyal to his/her profession,” “I think that people these days move away from their profession too often,” and “If I got an offer for another profession, I would not feel that it was right to leave my current profession.”

Continuance professional commitment (CPC) refers to the belief that it would be costly to leave one’s present career path. Four items were used to measure this construct: “Too much of my life would be disrupted if I decided to leave my profession now,” “It would be too costly for me to leave my profession now,” “Right now, staying in my profession is a matter of necessity as much as desire,” and “A serious consequence of leaving my profession would be the scarcity of available alternatives.”

ILPA also can be affected by the three dimensions of organizational commitment: affective (AOC), normative (NOC), and continuance (COC). These items are similar to the three components used to measure professional commitment, but we changed “profession” to “organization.”

The motivations of the use of a technology will drive the actual use of that technology (Roca & Gagne, 2008). LinkedIn usage behavior may have various influences on the three dimensions of professional commitment, which in return affect ILPA. In this study, we control for actual LinkedIn usage. The number of connections, the weekly average, and the number of years as a LinkedIn member (Table 2 above) were also collected and considered as control variables that could affect ILPA.

Professionals’ intention to leave an organization for career advancement also depends on organizational support for development (OSD). The programs and policies for professionals’ development influence the three dimensions of organizational commitment, which in turn affect professionals’ ILPA. Direct and indirect investments in a profession represent costs that are operationalized mainly by variables such as age, education, and tenure in the profession (Becker, 1960).

Past research has found that individual behavior may vary across personal factors such as gender, education, age, and annual income (e.g., Agarwal & Prasad, 1999; Frankel, 1990; Gefen & Straub, 1997; Venkatesh & Morris, 2000; Venkatesh et al., 2003). We consider the tenure of a professional’s LinkedIn use and his/her usage frequency because frequent users are likely to be more familiar with its features, which may affect their continued use.

In this study, gender is coded as 0 for “male” and 1 for “female.” Age is coded from 1 for “18 to 25” to 5 for “51 or above.” Education is coded from 1 for “secondary school” to 4 for “post-graduate.” Annual income is coded from 1 for “no income” to 7 for “over HK$60,000.” Tenure is coded from 1 for “1 year” to 7 for “7 years.” Number of connections is coded from 1 for “0–100” to 5 for “401 or above.” Frequency is coded from 1 for “0–2 hours” to 5 for “8 hours or over.”

**Analyses and Results**

***Data analysis***

We computed the means, standard deviations, and bivariate correlations for all data. To ensure that the instruments of this study are reliable and valid, we conducted confirmatory factor analysis of the essential constructs: the support for the three basic innate needs, intrinsic motivation, introjected regulation, external regulation, and the intention to leave an organization for professional advancement due to LinkedIn use. To test the hypotheses, we used structural equation modeling to analyze the theoretical framework. We also checked whether the control variables had any significant effects on ILPA.

***Instrument reliability and validity***

Reliability is defined as the degree to which a construct is free from errors and provides consistent results. We used Cronbach’s alpha to measure the internal consistency of the multi-item scales. As shown in Table 3, the Cronbach’s alphas of all constructs in this study exceeded 0.7. This shows that the sets of items correlated well with each other; therefore, all of them are deemed reliable. In addition, because all the items in these constructs were adapted from past studies, all constructs can be considered representative in terms of face validity.

***Means, standard deviations, Cronbach’s alpha, and correlation variables***

Considering the standard deviations of all constructs, there are enough variations for the sampled data to represent the population of LinkedIn users. Table 3 displays the correlations of the variables; that all the correlation values are below 0.7 suggests that every construct is independent of the others. The mean of perceived autonomy support (PAS) is 4.89, which is higher than the neutral point of 4, indicating that professionals receive a high degree of autonomy support from their use of LinkedIn. Perceived relatedness support (PRS) and perceived competence support (PCS) have means of around 4, which are close to the neutral point of 4, indicating that professionals receive a fair amount of competence and relatedness support from LinkedIn use. Intrinsic motivation (IM), introjected regulation (IR), and external regulation (ER) have mean values of 4.88, 3.85, and 5.46, respectively, indicating that professionals were most strongly motivated by external regulation, second by intrinsic motivation, and third by introjected regulation. The mean value for the intention to leave an organization for professional advancement (ILPA) is 4.79, indicating that professionals using LinkedIn intended to leave their organizations in the near future.

(Insert Table 3 here)

***Common method bias***

To test for common method bias, we applied Harman’s single factor test (Podsakoff et al., 1986). The results of the total variance obtained from the exploratory factor analysis of the essential variables (PAS, PCS, PRS, IM, IR, ER, and ILPA) indicate that no single factor, with a dominant value of 14.2%, accounts for most of the covariances. We also applied the marker variable technique to examine the effect of common method variance on structural relationships (Williams et al., 2010; Malhotra et al., 2006). In this regard, two unrelated items, “I enjoy watching Hong Kong movies” and “Hong Kong movies are entertaining,” were included in the survey. To test the common method variance, we applied structural equation modeling (SEM) with and without the marker. Our analysis shows no obvious difference between the path coefficients with and without the marker. Furthermore, the results of the SEM indicated different levels of significance for the path coefficients. These findings confirmed that common method bias was not significant and therefore not a concern in the current study.

***Factor Analysis***

Convergent validity was evaluated for the measurement scales using two criteria (Fornell and Larcker, 1981): First, all the indicator factor loadings should be significant and exceed 0.70. Second, the average variance extracted (AVE) by each construct should exceed the variance due to the measurement errors for that construct (i.e., should be above 0.50). Table 4 shows the result of the factor analysis on dependent variables and Table 5 shows the result of the confirmatory factor analysis on the controlled variables: affective professional commitment (APC), normative professional commitment (NPC), continuance professional commitment (CPC), affective organizational commitment (AOC), normative organizational commitment (NOC), continuance organizational commitment (COC), and organizational support for development (OSD).

(Insert Tables 4 & 5 here)

Table 6 demonstrates the correlation matrix of the constructs, verifies whether the constructs potentially overlap by their correlations and helps to analyze whether the constructs are independent. This table consists of three pieces of information: 1) correlation coefficients among all constructs, 2) the average explained variance (AVE), which indicates the explained variance of the measurements of related constructs, and 3) the square root of AVE as stated on the diagonal in the matrix. If the correlation coefficients between two constructs are below 0.7, they are deemed independent. As indicated in Table 6, all correlation coefficients are below 0.7 which indicates that they are independent of each other. Moreover, according to Fornell and Larcker (1981), if the square roots of the AVE are all higher than the correlations between constructs, then discriminant validity of all constructs can be assumed. The diagonal elements shown in Table 6 (reporting the square root of the variance shared between a construct and its measures) are higher than the correlations between the target constructs without exception. Hence, the discriminant validity of all the constructs in this research are considered acceptable and both conditions for convergent validity are satisfied.

(Insert Table 6 here)

Next, the structural model fit of the framework is evaluated. Table 7 shows the indices of the structural model in compliance with the combinational rule on desired levels for various kinds of fitness from Hu and Bentler (1999). The analysis shows evidence of good model fit.

(Insert Table 7 here)

(Insert Figure 2 here)

Figure 2 shows the result after running structural equation modeling. All three kinds of support have different extents of influence on professionals’ motivations for using LinkedIn. PAS has a positive influence on intrinsic motivation (β = .500\*\*\*), introjected regulation (β = .114\*\*), and external regulation (β = .640\*\*\*). PCS also has a positive influence on intrinsic motivation (β = .124\*\*), introjected regulation (β = .616\*\*), and external regulation (β = .175\*\*). While PRS has a positive influence on intrinsic motivation (β = .274\*\*), it has no significant effect on introjected regulation (β = -.085) or external regulation (β = -.062). The three motivations, intrinsic motivation, introjected regulation, and external regulation, have positive effects on ILPA (β = .142\*\*; 0.230\*\*\*; 0.092\*).

We also find that the control variables NPC, AOC, COC, OSD, age, and position have significant negative effects on ILPA (β = -0109\*, -0.209\*\*\*, -0.206\*\*\*, -0.323\*\*\*, -0093\*, -0108\*). This is consistent with the notion that if a professional feels obligated to stay with his/her profession (NPC), his/her tendency to stay with his/her organization is rather high. To a certain extent, when a professional has a strong sense of belonging to his/her organization (AOC), is older (age), has a relatively high position within the organization (position), or must sacrifice too much to leave his/her organization (COC), his/her desire to leave is minimal. Furthermore, when a professional receives strong support from his/her organization (OSD), he/she is highly likely to remain and stay loyal to the organization.

**Hypotheses Testing**

This study examines the effect of LinkedIn use on professionals’ intention to leave their organizations for professional advancement. From the analysis of structural equation modeling, H1a, H1b, and H1c are supported. Consistent with SDT, it is confirmed that autonomy support, competence support, and relatedness support have positive influences on intrinsic motivation. As expected, professionals receive support for autonomy, competence, and relatedness through LinkedIn use. The information learned and knowledge gained provide professionals with new choices and options for their career planning and development and give them new skill sets to sustain their competence. The friendly environment helps reinforce professionals’ intrinsic motivation to continue using LinkedIn.

H2a, H2b, and H2c are supported. Introjected regulation is positively influenced by perceived autonomy and competence support but unaffected by perceived relatedness support. A professional should not ignore the benefits gained from LinkedIn use: The information learned and knowledge gained provide professionals with new choices and options for their career planning and development and help them acquire new skill sets to sustain their competence. As such, many professionals feel obliged and pressure themselves to continue using LinkedIn.

H3a, H3b, and H3c are supported. External regulation is positively influenced by perceived autonomy and competence support but has no relationship with perceived relatedness support. Similar to H2a, H2b, and H2c, information learned and knowledge gained not only offer professionals new choices and options for their career planning and development but also help them develop new skill sets to enhance their competence. Continued LinkedIn use is therefore encouraged because of the anticipated benefits for career development and advancement.

H4a, H4b, and H4c are supported. ILPA from using LinkedIn is positively influenced by intrinsic motivation and introjected and external regulations. LinkedIn offers searching for career opportunities for professionals and a recruitment function for headhunters to identify potential candidates. Positive experiences and the opportunity for better career development and advancement encourage professionals’ continued LinkedIn use. Eventually, they have a high likelihood of leaving their organization for professional advancement.

***Post-hoc Analyses and Findings***

Our results in Figure 2 uncover strong connections between the three sets of support and motivations and on ILPA. Perceived autonomy support (PAS) pairs with external regulation (ER), perceived competence support (PCS) pairs with introjected regulation (IR), perceived relatedness support (PRS) pairs with intrinsic motivation (IM) as well as introjected regulation and ILPA; all show stronger associations between each other. To verify the relative strengths of these associations, the Cohen and Cohen (1983) equation is used:

*t = (rxz –ryz) ∙ sqr((n – 3)(1+ rxy))/sqr (2 ∙ (1– r2xz –r2yz –r2xy + 2 rxz ∙ryz ∙rxy ))*

First, for the perceived autonomy support and external regulation pair, we apply *x* = external regulation, *y* = introjected regulation, *z* = perceived autonomy support, *n* = sample size (379), *rxy*= 0.42, *ryz* = 0.30, *rxz* = 0.61, the *t* value is equal to 2.61, and the corresponding *p* value is < 0.05 (one-tailed test). Then, we substitute *x* = external regulation, *y* = intrinsic motivation, *z* = perceived autonomy support, *n* = 379, *rxy*= 0.49, *ryz* = 0.60, *rxz* = 0.61, and the *t* value is 2.96 (*p* < 0.05, one-tailed test). Both analyses show that PAS has a stronger effect on ER than IM and IR.

For the second pair, perceived competence support and introjected regulation, we apply *x* = introjected regulation, *y* = external regulation, *z* = perceived competence support, *n* = 379, *rxz* = 0.56, *ryz* = 0.40, *rxy* = 0.43, the *t* value is 3.59, with *p* < 0.05. This confirms that perceived competence support has a stronger effect on introjected regulation than on external regulation. When we apply *x* = introjected regulation, *y* = intrinsic motivation, *z* = perceived competence support, *n* = 379, *rxz* = 0.56, *ryz* = 0.41, *rxy* = 0.32, the *t* value is 3.26, with *p* < 0.05. Both analyses confirm that PCS has a stronger effect on IR than on IM and ER.

For the third pair, perceived relatedness support (PRS) and intrinsic motivation (IM), we substitute *x* = intrinsic motivation, *y* = introjected regulation, *z* = perceived relatedness support, *n* = 379, *rxy*= 0.32, *ryz* = 0.22, *rxz* = 0.53; the *t* value is 1.97 (*p* < 0.05, one-tailed test). Next, to compare the effects of PRS on IM and ER, we substitute *x* = intrinsic motivation, *y* = external regulation, *z* = perceived relatedness support, *n* = sample size (379), *rxy*= 0.49, *ryz* = 0.35, *rxz* = 0.53; the *t* value is 3.19 (*p* < 0.05, one-tailed test). Both findings demonstrate that PRS has a stronger effect on IM than IR and ER.

To verify the last pair introjected regulation and ILPA, we apply *x* = introjected regulation, *y* = external regulation, *z* = ILPA, *n* = 379, *rxz* = 0.23, *ryz* = 0.20, *rxy* = 0.43, the *t* value is 0.56, with *p* < 0.05. This means that introjected regulation does not have a stronger effect on ILPA than external regulation. We substitute *x* = introjected regulation, *y* = intrinsic motivation, *z* = ILPA, *n* = 379, *rxz* = 0.23, *ryz* = 0.19, *rxy* = 0.32; the *t* value is 0.69, with *p* < 0.05. Thus, introjected regulation does not have a stronger effect on ILPA than intrinsic motivation. Finally, we substitute *x* = intrinsic motivation, *y* = external regulation, *z* = ILPA, *n* = 379, *rxz* = 0.19, *ryz* = 0.20, and *rxy* = 0.49; the *t* value is -0.197, which means that intrinsic motivation does not have a stronger effect on ILPA than external regulation. In sum, no single motivation posits the strongest impact on ILPA, but all three (intrinsic motivation, introjected regulation, and external regulation) have an equal impact on ILPA.

To further validate the findings for the above four pairs, we also impose four constrained models as follows: 1) assuming that perceived autonomy support has equal effects on external regulation, intrinsic motivation, and introjected regulation; 2) assuming that perceived competence support has equal effects on external regulation, intrinsic motivation, and introjected regulation; 3) assuming that perceived relatedness support has equal effects on external regulation, intrinsic motivation, and introjected regulation; and 4) assuming that the effects of external regulation, intrinsic motivation, and introjected regulation on IPLA are identical. We compare the four models with the unconstrained model and find that there are significant differences between constrained models 1, 2, and 3 and the unconstrained model. However, the difference between constrained model 4 and the unconstrained model is not significant, which indicates that constrained model 4 and the unconstrained model are statistically identical. In sum, we affirm that the four findings above are valid.

**Discussions**

***Theoretical implications***

A great deal of research attention in the past were devoted to exploring factors that influence voluntary employee turnover in organizations (Hancock, Allen, Bosco, McDaniel, & Pierce, 2013). On the one hand, professionals may intend to leave their organizations if they feel their services are not properly valued (Niederman et al., 2007; Rong & Grover, 2009) and when switching jobs is more accessible and easy. On the other hand, organizations may suffer costly turnover and production deficiencies from losing talents, yet could benefit from recruiting better-fit talents when the talent pools are more accessible through professional network sites.

The findings of the current study have several implications for theory. First, in line with self-determination theory, results demonstrate the support of perceived autonomy, competence, and relatedness is fulfilled through LinkedIn use and that professionals are intrinsically and extrinsically motivated to continue their LinkedIn use to eventually achieve ILPA. This is consistent with many previous studies on motivation through the self-determination approach. For instance, Ntoumanis (2001) suggested that individuals are intrinsically and extrinsically motivated to exercise through the support of all three basic psychological needs for enjoyment and good health. Similarly, Halvari et al. (2013) demonstrated that dental home care and treatment behavior are sustained through intrinsic and extrinsic motivations. Our study confirms that the LinkedIn website enables and supports professionals to search for jobs, gain new insights and information, and build networks, whether their use is intrinsically or extrinsically motivated.

Second, our study sheds new light on the evolvement of job search processes has progressed in parallel with technology, which indeed encourages overall turnover. Professionals are increasingly dependent on social media for professional development and career advancement, prompting increasing mobility. The easy access to Internet at anytime and anywhere no doubt has changed the way professionals are motivated and interact with others for their career development and advancement. The nature of LinkedIn not only serves as a platform for professionals who specifically look for job change, but also enables professionals to achieve different personal goals that could eventual lead to ILPA. As a whole, we suggest professionals using LinkedIn have mixed agendas, some have an immediate need for a new job while others may not, but just seeing what is available on the job market or utilizing the platform to build up networks, might change that.

In order to interpret the findings of the post-hoc analysis we apply the time perspective concept to explain a professional’s behavior and motivation to participate in LinkedIn. Many previous studies documented the future time perspective has yielded positive associations between intrinsic motivation and introjected regulation on self-regulated learning (De Bilde et al., 2011) and between intrinsic motivation and identified and integrated regulations on exercise behavior (Wininger & DeSena, 2012), however, almost no research has fully investigated nor included the three basic psychological needs the way we have done here.

Time perspective is defined as “the often non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence and meaning to those events” (Zimbardo & Boyd, 1999; p1271). Conceptually, present-oriented individuals react to instant stimuli and social settings; they think more about how their current actions can bring immediate pleasure and excitement (Wininger & DeSena, 2012). On the contrary, future-oriented individuals make decisions and take actions based on the anticipated consequences of imagined future scenarios, and they think more about how their current actions influence their future (Wininger & DeSena, 2012). Individuals with a present–future orientation combine both types of characteristics: they care about immediate results and future consequences.

In our opinion, both perceived autonomy support and external regulation are associated with future orientation. To a certain extent, it is logical to think that people take actions because they want to gain something in the future. Using LinkedIn gives professionals choices and options, which encourage them to plan and act on their future career development and advancement. Professionals believe the new choices and options might help them progress in their career in the future as a reward. If no choices and options are available, a professional will stay put and likely do nothing because nothing will be changed in the future.

For perceived competence support and introjected regulation, we suggest this pair represents a continual time horizon, the present and the future. Through LinkedIn participation, professionals can continuously learn new knowledge and information in the hope of better equipping themselves for any advancement opportunity. Competent professionals typically want to be the best and aim to remain hot in the job market. They must continue to learn and enhance their competitiveness. Because of that, professionals often feel obliged and pressured to use LinkedIn continuously, because if they stop, they may miss out on something important. Because LinkedIn offers such opportunities, it makes sense that professionals would visit the website continually. Hence, we suggest both perceived competence support and introjected regulation are associated with present and future orientation.

For the pair of perceived relatedness support and intrinsic motivation, we suggest they are associated to present orientation. Professionals using LinkedIn tend to establish and expand their social network with other professionals for bonding and acceptance. Although most supports are generally positive, sometimes criticisms are found also. Whether they are positive or negative supports, these responses are instant rather than delayed. The act of LinkedIn users therefore represents an immediate reaction out of their own interests instead of being pushed or controlled by external factors. Hence, it is reasonable to categorize perceived relatedness support and intrinsic motivation as present orientation.

For ILPA, we claim it is associated with present and future time horizons because professionals using LinkedIn can find new jobs and receive new job offers at any time. Instead of having a sole association with introjected regulation, the post-hoc analyses verified all intrinsic motivation, introjected and external regulations posit similar influence to ILPA. In general, we agree that professionals using LinkedIn can have mixed agendas along different time horizons, some professionals have an immediate need for a new job, possibly because of dissatisfaction with their current job, layoff pressure, or being fired, while others have no intention of changing jobs now but keep their options open and use the LinkedIn platform to build up their network and credentials for the future. Other professionals may not have a set schedule for changing jobs and are keeping their options open should an offer for a better job be made. After all, the time perspective concept as one of the possible interpretations along the full SDT model to explain how participating in LinkedIn would influence professionals’ ILPA is not empirically tested. Future research will be needed to verify this insightful finding.

***Practical implications***

From an organization’s perspective, employee turnover has been widely considered a negative indicator of organizational effectiveness as it is associated with high costs from losing human capital, recruiting and training substitute employees, reduced productivity and service quality (Shaw et. al., 2013; Tse et. al., 2013). With increasing turnover rates and costs, it is important for organizations to understand how a professional social media site could influence a professional’s behavior, whether he/she intends to change jobs or not. Professionals realize that LinkedIn is a good platform for job searching, accessing the latest industry and market information, and network building, and they believe that their continual use of LinkedIn can eventually help them achieve ILPA. HR managers can use the LinkedIn platform to identify and recruit new employees when hundreds of thousands of potential candidates’ profiles are easily accessible. Finally, it is important for LinkedIn to continue to provide good support to its users and to attract new users; as such, website enhancement and improvement through innovation and creativity are crucial in sustaining LinkedIn’s popularity.

**Limitations**

This study has several limitations that need to be considered. First, this research used a relatively small sample considering that there are hundreds of millions of LinkedIn members. Therefore, a large-scale study should be conducted to confirm the results of this research.

Second, there are many other professional network sites besides LinkedIn. In China, for example, several professional networks have been established and are attracting a growing number of subscribers. Future research should consider including these websites to be more representative. In addition, it would be interesting to further explore and compare ILPA between professionals in similar contexts that use network sites and those who do not.

Third, the investigated constructs are not supposed to remain unchanged over time, and the research method may not fully capture the dynamics of professionals’ career development and network building.

Finally, the problem of common method bias may exist, although it is not a serious concern as confirmed in our analysis. To address the above issues, future research should consider using multi-methods and longitudinal research designs. A longitudinal study combining qualitative and quantitative data would enable a process-oriented perspective that cannot be achieved using a variance-based approach, such as the one used here. This would allow better understanding of professionals’ motivation and thereby underlying “how/why” of the relationships as if ILPA trigger LinkedIn usage or vice versa if LinkedIn usage inspires professionals’ ILPA.

**Conclusions**

The results of this study suggest that professionals who use LinkedIn intend to leave their organizations for professional advancement, whether immediately or in the future. Many companies and recruiters use LinkedIn to identify potential employees (Bohnert & Ross, 2010; Sacks & Graves, 2012; Wetsch, 2012), and the site plays an important role for professionals, as this demonstrates their desire for ILPA. Our findings confirm that professionals obtain support for the three basic needs through LinkedIn use and are motivated both intrinsically and extrinsically to continue their use to achieve ILPA. A professional seeking advancement, whether to remain in the same organization or to move to a different organization, is likely to believe that using LinkedIn will help him/her to achieve this goal. With the increasing popularity of online social media that promote professional networking, HR managers must consider new and different measures to retain valuable employees, as turnover is time consuming and costly.

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**Figure 1: Theoretical framework**

H1a

H2a

H3a

H4a

H1b

H2b

H4b

H3b

H1c

H4c

H2c

H3c

**Figure 2: Empirical result of the theoretical model**

0.500\*\*\*

0.114\*\*

0.640\*\*\*

0.142\*\*

0.124\*\*

0.230\*\*\*

0.616\*\*\*

0.175\*\*\*

0.092\*

0.274\*\*\*

-0.085

-0.062

APC (0.050)

CPC (-0.014)

NPC (-0.109\*)

AOC (-0.209\*\*\*)

COC (-0.206\*\*\*)

NOC (-0.020)

OSD (-0.323\*\*\*)

Income (0.089)

Gender (-0.003)

Age (-0.093\*)

Education (0.007)

Position (-0.108\*)

Work Experience (-0.016)

No. of Groups (-0.008)

Average Usage (0.011)

Join Year (-0.005)

Table 1: Number of invitations sent to the LinkedIn discussion groups

|  |  |
| --- | --- |
| **Discussion group** | **Number of invitations via inbox message** |
| American Society of Transportation and Logistics (ASTL) | 360 |
| Deutsche Bank | 300 |
| Robert Half | 280 |
| American Psychological Association of Graduate Students | 250 |
| Android Developer Group | 250 |
| Banking Careers | 250 |
| Business Analyst Professional | 250 |
| DBS Group | 250 |
| Digital Marketing | 250 |
| Hotel Industry Professionals Worldwide | 250 |
| Human Resources (HR) and Talent Management Executive | 250 |
| ISM – Purchasing and Supply Chain Manager Professionals | 250 |
| Logistics and Supply Chain professionals | 250 |
| Public Diplomacy and Diplomatic Academy | 250 |
| Social Media News and Tech | 250 |
| TDWI: Business Intelligence and Data Warehousing Discussion Group | 250 |
| Travel and Tourism Industry Professionals Worldwide | 250 |
| Worldwide Management Consultants | 250 |
| Big Data and Analytics | 200 |
| SAP Community | 140 |
| Australian Universities HR Network | 100 |
| Design Research Society | 100 |
| Hong Kong Computer Society (HKCS) | 100 |
| Hong Kong IT Professionals Association | 100 |
| IT Developers Hong Kong | 100 |
| Supply Chain Young Professionals | 100 |
| APICS Group | 50 |
| Barclays Global Network Group | 50 |
| Harvard Business Review | 50 |
| Job Mentors | 30 |
| **Total** | **5,810** |

Table 2: Descriptive statistics of the respondents

|  |  |
| --- | --- |
| **Gender:** Male (25.1%), Female (74.9%) | **Age:** Below 25 (5.3%), 26–30 (10.6%), 31–40 (29.4%), 41–50 (32.5%), 51 or above (22.2%) |
| **Education:** Secondary school (1.3%), Diploma/Higher diploma (6.1%), Graduate (20.6%), Post-graduate (72%)  **Annual Income (US$):** Below $20,000 (11.4%), $20,001–$40,000 (10.8%), $40,001–$60,000 (9.8%),  $60,001–$80,000 (20.6%), $80,001–$100,000 (14.6%), $100,001 or above (32.8%) | |
| **No. of professional connections:** 0–100 (13.2%), 101–200 (9.8%), 201–300 (6.1%), 301–400 (8.5%), 401 or above (62.4%) | |
| **Weekly average time spent on LinkedIn:** 0–2 hours (46.3%), 3–4 hours (25.7%), 5–6 hours (12.7%), 6–7 hours (3.2%), 8 hours or above (12.2%) | |
| **LinkedIn membership duration:** 1 year (11.9%), 2 years (10.6%), 3 years (6.3%), 4 years (7.4%), 5 years (19.6%), 6 years (10.6%), 7 years (33.6%) | |

Table 3: Descriptive Statistics and Reliability

|  |  |  |
| --- | --- | --- |
| **Variables** | **Mean\*** | **Std. Dev.** |
| Perceived autonomy support (PAS) (Cronbach’s alpha = 0.933) | 4.89 | 1.111 |
| Other professionals on LinkedIn give me advice that helps me build a sense of control over my career. (PAS1) | 4.81 | 1.193 |
| I can be open about my career aspirations with other professionals on LinkedIn. (PAS2) | 4.97 | 1.222 |
| I can trust other professionals in exchanges relating to my career choice when using LinkedIn. (PAS3) | 4.72 | 1.225 |
| Other professionals on LinkedIn provide me with choices and options for my career planning and development. (PAS4) | 5.08 | 1.230 |
| Perceived competence support (PCS) (Cronbach’s alpha = 0.859) | 4.41 | 1.196 |
| I have become masterful in my profession from LinkedIn use. (PCS1) | 4.75 | 1.310 |
| I feel competent when receiving endorsements and positive remarks from other professionals on LinkedIn. (PCS2) | 4.21 | 1.353 |
| I gain new information and knowledge from other professionals on LinkedIn. (PCS3) | 4.51 | 1.353 |
| I feel that I can develop new skill sets by using LinkedIn. (PCS4) | 4.22 | 1.307 |
| Perceived relatedness support (PRS) (Cronbach’s alpha = 0.895) | 4.03 | 1.191 |
| I feel connected with other professionals when using LinkedIn. (PRS1) | 3.87 | 1.350 |
| I feel a sense of belonging with other professionals when using LinkedIn. (PRS2) | 4.07 | 1.327 |
| I can share my feelings and talk with other professionals on LinkedIn. (PRS3) | 4.22 | 1.273 |
| Other professionals on LinkedIn care about me so I don’t feel alone through LinkedIn use. (PRS4) | 3.96 | 1.442 |
| Intrinsic motivation (IM) (Cronbach’s alpha = 0.884) | 4.88 | 1.282 |
| I use LinkedIn because I enjoy using this social network site very much. (IM1) | 5.15 | 1.433 |
| I use LinkedIn because I have fun using this social network site. (IM2) | 4.83 | 1.382 |
| I use LinkedIn because I enjoy the moments of pleasure that LinkedIn brings me. (IM3) | 4.66 | 1.385 |
| Introjected regulation (IR) (Cronbach’s alpha = 0.793) | 3.85 | 1.313 |
| I have to visit LinkedIn because using LinkedIn makes me feel active in developing my career. (IR1) | 4.41 | 1.512 |
| I use LinkedIn because I don’t want to feel stuck in my career if I don’t. (IR2) | 3.53 | 1.552 |
| I use LinkedIn because my career reputation depends on using it. (IR3) | 3.60 | 1.629 |
| External regulation (ER) (Cronbach’s alpha = 0.861) | 5.46 | 1.204 |
| I use LinkedIn because it helps me to build my career path. (ER1) | 5.39 | 1.437 |
| I use LinkedIn because it enables me to meet many people in my profession who can help my career development and advancement. (ER2) | 5.57 | 1.258 |
| I use LinkedIn because of the benefits of enhancing my career development and advancement. (ER3) | 5.42 | 1.380 |
| Intention to leave an organization for professional advancement (ILPA) (Cronbach’s alpha = 0.832) | 4.79 | 1.328 |
| I sometimes explore my opportunities for career advancement in other companies. (ILPA1) | 5.38 | 1.218 |
| I am likely to leave this company for career advancement at another company within the next year. (ILPA2) | 4.40 | 1.658 |
| I am likely to leave this company for career advancement at another company within the next two years. (ILPA3) | 4.61 | 1.685 |

\* 1 = strongly disagree and 7 = strongly agree

Table 4: Factor Analysis

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Component | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| IM1 | **.780** | .062 | .244 | .215 | .251 | .175 | .085 |
| IM2 | **.855** | .127 | .127 | .192 | .168 | .226 | .108 |
| IM3 | **.772** | .186 | .127 | .266 | .232 | .208 | .072 |
| IR1 | .196 | **.670** | .295 | .117 | .178 | .168 | .088 |
| IR2 | .141 | **.875** | .061 | .031 | .128 | .159 | .005 |
| IR3 | .003 | **.766** | .200 | .147 | .238 | .004 | .087 |
| ER1 | .180 | .237 | **.806** | .189 | .207 | .074 | .083 |
| ER2 | .134 | .123 | **.725** | .333 | .195 | .173 | .024 |
| ER3 | .148 | .205 | **.797** | .226 | .118 | .002 | .190 |
| PAS1 | .250 | .146 | .260 | **.718** | .331 | .250 | -.014 |
| PAS2 | .244 | .071 | .212 | **.786** | .197 | .269 | -.007 |
| PAS3 | .171 | .125 | .203 | **.790** | .322 | .163 | .057 |
| PAS4 | .182 | .080 | .262 | **.764** | .289 | .236 | .036 |
| PCS1 | .172 | .174 | .131 | .224 | **.793** | .286 | .064 |
| PCS2 | .230 | .131 | .160 | .228 | **.788** | .276 | .028 |
| PCS3 | .178 | .139 | .125 | .205 | **.787** | .292 | -.004 |
| PCS4 | .109 | .177 | .120 | .260 | **.766** | .336 | .053 |
| PRS1 | .158 | .150 | .094 | .206 | .365 | **.758** | .081 |
| PRS2 | .110 | .128 | .108 | .257 | .364 | **.757** | .006 |
| PRS3 | .178 | .019 | .071 | .145 | .264 | **.773** | .082 |
| PRS4 | .196 | .119 | .030 | .183 | .168 | **.832** | -.051 |
| ILPA1 | .119 | -.088 | .272 | .008 | .043 | .143 | **.714** |
| ILPA2 | .050 | .112 | -.003 | .054 | .033 | -.007 | **.913** |
| ILPA3 | .033 | .108 | .012 | -.013 | .046 | -.046 | **.924** |
| Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser normalization. Rotation converged in 7 iterations.  Factor loading greater than 0.67 are bold | | | | | | | |

Table 5: Confirmatory factor analysis for the control variables of APC, NPC, CPC, AOC, NOC, COC, and OSD.

|  |  |  |  |
| --- | --- | --- | --- |
| Fit Indices | Initial model | Final Model | Desired Level |
| χ2 /df | 4.130 | 3.189 | <3.0 |
| CFI | .785 | .862 | >0.90 |
| TLI | .774 | .840 | >0.90 |
| RMSEA | .091 | .076 | <0.08 |
| GFI | .758 | .898 | >0.90 |
| AGFI | .660 | .776 | >0.80 |

Table 6: Correlation matrix

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | AVE | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. PAS | .585 | .765 |  |  |  |  |  |  |
| 2. PCS | .582 | .476\*\* | .763 |  |  |  |  |  |
| 3. PRS | .608 | .587\*\* | .452\*\* | .780 |  |  |  |  |
| 4. IM | .643 | .600\*\* | .407\*\* | .526\*\* | .802 |  |  |  |
| 5. IR | .593 | .307\*\* | .562\*\* | .216\*\* | .322\*\* | .770 |  |  |
| 6. ER | .602 | .605\*\* | .398\*\* | .346\*\* | .492\*\* | .428\*\* | .776 |  |
| 7. IPLA | .723 | .101\* | .148\*\* | .065 | .187\*\* | .225\*\* | .204\*\* | .850 |

*\* p* < .05*, \*\* p* < .001

Table 7: Structural Model Fit

|  |  |  |
| --- | --- | --- |
| Fit Indices | Main model | Desired Level |
| χ2 /df | 2.468 | <3.0 |
| CFI | 0.950 | >0.90 |
| TLI | 0.941 | >0.90 |
| RMSEA | 0.062 | <0.08 |
| GFI | 0.883 | >0.90 |
| AGFI | 0.851 | >0.80 |