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Perceptions, stereotypes and cognitive resources of female businesspersons:

A social identity approach.

AMY LIM JIA YING

SINGAPORE MANAGEMENT UNIVERSITY

2015

# PERCEPTIONS AND COGNITIVE RESOURCES OF FEMALE BUSINESSPERSONS

Perceptions, stereotypes and cognitive resources of female businesspersons:

A social identity approach.

by

Amy Lim Jia Ying

Submitted to School of Social Sciences in partial fulfillment of the requirements for the  
Degree of Master of Science in Psychology

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2015

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# PERCEPTIONS AND COGNITIVE RESOURCES OF FEMALE BUSINESSPERSONS

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## ABSTRACT

According to the Stereotype Content Model (SCM), female businesspersons are often stereotyped and labeled either as a *Career Women*, competent but cold, or as a *Traditional Women*, warm but incompetent. This suggests that female businesspersons are generally perceived to be either competent or warm individuals, but not both. However, this may not reflect female businesspersons' own perceptions of their competence and warmth in the workplace. Contrary to the stereotypes, evidence has demonstrated that some female businesspersons display behaviors that signal both competence and warmth. Employing a social identity approach, I propose that gender-professional identity integration (G-P-II), an individual difference that refers to the perceived compatibility between the female identity and professional identity, plays a crucial role in how female businesspersons perceive themselves and manage the stereotypes they face in the workplace. Study 1 found that female business students do not differ in their perceived co-existence of competence and warmth of themselves. However, they differed on the perceptions they had of another female professional depending on their level of conflict between their dual social identities. Female business students with lower levels of conflict were also found to endorse female businesspersons stereotypes less. Study 2 revealed that female business students with higher levels of conflict were more ego-depleted when asked to integrate identity-related knowledge systems simultaneously, suggesting lesser availability of self-regulatory resources to cope with stereotypes. Theoretical and practical implications of the findings are discussed.

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## Chapter 1. INTRODUCTION

The participation rates of women in the labor force had shown an increasing trend over the past decade. For example, a 7.8% increase from 2002 to 2012 in the United States (“Household Data: Employed persons by occupation, sex, and age”, 2003; “Household Data: Employed persons by occupation, sex, and age”, 2013) and a 7.2% increase from 2003 to 2013 in Singapore (“Labor Force in Singapore: Highlights”, 2013) were observed. Moreover, women account for 49% of the workforce in management, professional and related occupations in United States (“Household Data: Employed persons by occupation, sex, and age”, 2013), and 44.4% of the workplace in these occupations in Singapore (“Labor Force in Singapore: Table 28”, 2013) in 2013. However, despite these positive indicators, things are less than favorable for women in the workplace. Women were found to only hold, on average, under 20% of leadership positions, even though some measures show that they are outperforming their male peers across sectors such as academia, business and commercial banking, law, and medicine (Lennon, Spotts, & Mitchell, 2013). Sandberg (2010) noted that out of 190 states, only nine heads of state are women; and only 15% of the top jobs in the corporate sector are held by women. Among the Fortune 500 companies, even though half of the middle managers are female, women only make up 16.9% of the board seats, and only 3.1% of CEO positions (“Catalyst Census: Fortune 500 Women Board Directors”, 2013).

The slow career advancement and the lack of women leaders have been attributed to gender role stereotypes, which constrain women from having equal opportunities as their male counterparts (e.g. Tharenou, 1999; Valian, 1998; Burke & MacDermid, 1996). While these stereotypes have a negative impact on the outcomes of women in the workplace, some studies have demonstrated that female businesspersons’ self-perceptions have crucial effects on their outcomes in the workplace (Jackson, 2001; Tapia & Kvasny, 2004). This indicates the need to examine the self-perceptions of female businesspersons’ if one were to

understand why female businesspersons face constraints in the workplace. Qualitative accounts have provided contradictory evidence in female businesspersons' perceptions and reactions towards stereotypes of female businesspersons. While some have shown female businesspersons to perceive themselves and behave in stereotypic ways (Fischmayr, 2002), others have revealed female businesspersons' refusal of female businesspersons stereotypes via their self-perceptions and their anti-stereotypic behaviors in the workplace (Kyriakidou, 2011). However, little is known regarding these conflicting findings in past research about female businesspersons' self-perceptions, suggesting that it is worthwhile to examine the perceptions of female businesspersons. Hence, this paper proposes that gender-professional identity integration (G-P-II), an individual difference that measures the degree of perceived compatibility between the female identity and professional identity, accounts for the differences in past research regarding female businesspersons' self-perceptions and reactions towards gender-related stereotypes. Additionally, given that reactance against gender-related stereotypes may involve integrative processes between female businesspersons' conflicting social identities, this paper explores the impact of G-P-II on cognitive resources, which will facilitate in providing some insight towards the stereotypic behaviors of female businesspersons in the workplace.

## **Chapter 2. SOCIAL PERCEPTION**

Social perception, defined as the initial stage of how social perceivers form impressions of as well as make inferences about others, offers an explanation to the constraints women face in the workplace. The suitability for leadership roles, and other work-related opportunities, for female businesspersons (i.e., female employees engaged in corporate jobs in the business-related industries) seems to be influenced by the perceptions people have of them. Flynn and Anderson (2003) investigated the perceptions people have of male and female businesspersons in the workplace (as cited in Sandberg, 2013). They got students to read a case study of a successful venture capitalist who was either male or female and they rated the target on several characteristics. Their findings revealed that the female protagonist, compared to the male protagonist, was judged as a more selfish individual and was less worthy being hired, even though both female and male protagonists were perceived as equally competent and effective. Hence, this study showed that the relationship between success and likeability is a positive one for male businesspersons but a negative one for female businesspersons, and essentially revealed that male businesspersons are generally perceived differently from female businesspersons.

### **2.1 Fundamental Dimensions of Social Perception: Competence and Warmth**

The different perceptions people hold of male and female businesspersons can be understood from the relationship between the dimensions central to social perception. The constant recurrence of a two-dimensional structure in social perception across different subfields of research lends strong support to warmth (e.g., friendliness, empathy, and kindness) and competence (e.g., intelligence, efficacy, and skill) being fundamental dimensions of social perception (Asch, 1946; Rosenburg, Nelson, & Vivekananthan, 1968; Freedman, Leary, Ossorio, & Goffey, 1951; Wiggins, 1979; Fiske, Xu, Cuddy, & Glick, 1999; Fiske, Cuddy, Glick, & Xu, 2002), on which individuals and groups are perceived.

These dimensions also carry various labels across different studies (e.g., agency versus communality, feminine versus masculine traits) (Fiske, Cuddy, & Glick, 2007).

The relationship between competence and warmth, however, are mixed and inconsistent. Rosenberg et al. (1968) reported a positive correlation between these dimensions, and this is suggested to be due to, a halo effect - an individual who is perceived as warm is also be perceived as competent compared to an individual who is perceived as cold (i.e., who will also be perceived as incompetent). Contrary to this prediction, Judd, James-Hawkins, Yzerbyt, and Kashima (2005) found a negative relationship between competence and warmth. Kervyn, Yzerbyt, Judd and Nunes (2009) further showed the compensatory relationship between these dimensions such that an increase in one trait resulted in a decreased in the other. As such, this suggests that individuals are perceived as competent but cold (e.g., “She’s really smart... but her co-workers hate her”) or as warm but incompetent (e.g., She’s such a nice person... but she probably wouldn’t be able to lead”).

Hence, even though past research has consistently showed evidence for the existence of the two dimensions of warmth and competence in social perception, there have been conflicting findings for what the nature of relationship between these two dimensions. In the following section, I will introduce the Stereotype Content Model that can reconcile these inconsistent conclusions for the relationship between warmth and competence.

## **2.2 The Stereotype Content Model**

Proposed by Fiske et al. (2002), the Stereotype Content Model (SCM) posits that the content of group stereotypes vary according to the dimensions of competence and warmth. The content of group stereotypes is categorized within a competence-warmth matrix that consists of four cells. In this matrix, most out-group stereotypes fall into two cells, where competence and warmth share a negative relationship: low competence and high warmth, and high competence and low warmth. Out-groups within the former cell are perceived as low on

competence (i.e., does not threaten the status quo of societal reference groups) but high on warmth (i.e., no intent of harming others), and are usually disrespected but pitied. For example, the elderly and traditional women fall into this category of stereotype. Out-groups that fall into the latter cell are perceived high on competence (i.e., poses a competitive threat to people around them especially those who benefit from being the socially dominant reference group) but low on warmth (i.e., thought to be selfish as a justification for socially excluding these people) and are usually envied but resented. Asians and Jews are stereotyped to be in this category. Hence, out-groups usually contain a mixed stereotype content, that is, low ratings on one dimension and high ratings on the other, which matches the negative relationship between competence and warmth that Judd et al. (2005) and Kervyn et al., (2009) found.

At the same time, this model also allows for a positive relationship between competence and warmth. Fiske et al. (2002) suggests three possible groups who may belong to the cell with high warmth and high competence. These groups are one's in-groups, close allies, and the societal reference groups (society's dominant reference groups), who are viewed as the societal ideal. However, some out-groups also share a positive relationship between competence and warmth but these are usually social groups who are perceived as both low in competence and low in warmth, such as welfare recipients and poor people. These groups are disliked and disrespected out-groups who are viewed as parasites to the society due to their negative intent (i.e., low warmth) and their inability to succeed by their own means (i.e., low competence). Hence, the SCM propositions about these two categories of people match the positive relationship between competence and warmth that Rosenberg et al. (1968) found.

### 2.3 The SCM and Social Consequences for Female Businesspersons

The SCM proposes that different groups of people are perceived differently, and as such, the SCM can potentially provide explanations for the different perceptions people hold of male and female businesspersons. Male businesspersons tend to be regarded as the societal reference group within the organizational given that they are the majority group as well as the typical reference group in organizations. Hence, according to the SCM, they are more likely to be categorized under the highly favored cell with groups that perceived as both competent and warm, and this signals their suitability for senior leadership positions. However, given that female businesspersons are not the majority group in organizations and that they are traditionally not thought to belong to the workplace (Fournier & Kelemen, 2001), they tend to be regarded as the out-group within the workplace. As such, the SCM predicts that they will be perceived with mixed evaluative content given their out-group status in the workplace.

According to the SCM proposed by Fiske et al. (2002), female businesspersons are stereotyped and perceived in two different ways. Female businesspersons can be stereotyped as “*Career Women*<sup>1</sup>”, who are usually perceived as competent but cold, or as “*Traditional Women*”, who are usually perceived as warm but incompetent. Both, unfortunately, hold negative implications for careers for female businesspersons (Rosette & Tost, 2010).

Female businesspersons such as managers are stereotyped as *career women* and are perceived as competent but cold. In addition, they are perceived as hostile, selfish, devious, and cold (Heilman, Wallen, Fuchs, & Tamkins, 2004; Rudman & Glick, 1999; Rudman & Glick, 2001). The need for female businesspersons to demonstrate competence carries the risk of being assimilated into this category that is associated with perceived warmth deficit;

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<sup>1</sup> It is to note that the term female professionals used throughout this article refers to career-aspiring women in the workplace and does not imply that they naturally fall into the group of “*female professionals*” Fiske et al. (2002) included in the SCM. To make things clearer, the stereotyped group of “*female professionals*” that Fiske et al. (2002) had referred to in the SCM will now be referred to *Career Women* in this research paper.

this lack of warmth may also affect hiring and promotion decisions (Rudman & Glick, 1999), especially since the need for social skills and ability to connect others is increasingly becoming desirable leadership qualities (Cuddy, Glick, & Beninger, 2011).

Female businesspersons are stereotyped as the *traditional women* and are perceived as warm but incompetent when they present themselves femininely (Gill, Mills, Franzway, & Sharp, 2008), possess a low status position within the organization (Fiske et al., 1999), or when they become mothers (Cuddy, Fiske, & Glick, 2004). Although perceived warmth can benefit interpersonal relationships and cooperation within the organization, female businesspersons stereotyped as such face the challenge of proving their competence in the workplace, especially when female businesspersons are already constantly perceived as less competent than male businesspersons (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972). This perception results in the lack of preference for hiring them into male-dominated occupations (Cejka & Eagly, 1999; Glick, Wilk, & Perrault, 1995; Heilman, 1983) and leadership positions (Eagly & Karau, 2002; Heilman, 1983; Prentice & Carranza, 2002). Female businesspersons with children are further disadvantaged given their status as mothers. Their motherhood status activates the saliency of the traditional role of women, hence increasing their perceived warmth, but at a cost of their perceived competence (Cuddy et al., 2004). People expressed less interest in hiring, promoting and training for female businesspersons who are mothers (Cuddy et al., 2004). This finding is consistent with a field study, which showed that employers were less likely to call back working mothers (than women without children) applying for professional jobs (Correll, Benard, & Paik, 2007).

In sum, male businesspersons are consistently perceived as high in both warmth and competence signaling their suitability for senior management positions in organizations and other work-related opportunities. However, unlike male businesspersons, female businesspersons are constantly perceived as lacking in one dimension (i.e., either cold or

incompetent) that puts them into a disadvantage either way. As such, the way female businesspersons are perceived holds significant implications for the work-related opportunities that are offered to female businesspersons.

#### **2.4 From Social Perceptions to Self-perceptions**

The stereotypes of female businesspersons, which lead others to perceive them as lacking in competence or in warmth, contribute to the work-related constraints (i.e., work-related opportunities) they experience in the workplace. However, Fischlmayr (2002) suggests that female businesspersons' self-perceptions and beliefs they hold of themselves may also influence their career-related outcomes in the workplace.

Shifting to the perspective of female businesspersons, Fischlmayr (2002) observed that female businesspersons behaved stereotypically, and seldom made attempts to change the situation even when they were conscious of their stereotype-conforming behaviors. Consistent with Fischlmayr's (2002) findings, Jackson (2001) also reported that female businesspersons said that they did not see themselves moving into executive management positions because of the lack of strong female role models. Tapia and Kvasny (2004) also reported that female businesspersons in male-dominated jobs (e.g., Information Technology) perceived their careers negatively and believed they lacked the skills required for the job. These findings suggest that some female businesspersons are influenced by the stereotypes and perceptions of what a female businessperson should be and is capable of, and hence may suffer a cost in relation to their careers.

However, alternative evidence suggests that the type of self-perception described in the preceding paragraph is not shared uniformly amongst female businesspersons. For example, some female businesspersons, who were also aware of the stereotypes, did not accept these stereotypes (Kyriakidou, 2011). Instead, they sought to enact their careers in ways that would counteract existing stereotypes (Bendl, 2008). Kyriakidou (2011) also



reported how some female businesspersons saw their identity as a privilege that offered a unique insight on engineering projects. These studies imply that female businesspersons are aware of the stereotypes (i.e., paternalistic and envious) and the perceptions people have of them. More importantly, these studies demonstrate that female businesspersons differ in their self-perceptions and responses to the stereotypes of female businesspersons, and this can make a difference to their careers.

### **Chapter 3. SOCIAL IDENTITIES OF FEMALE BUSINESSPERSONS**

In the earlier section, past research about self-perceptions of female businesspersons was discussed and it can be seen that the presence of different self-perceptions may have differential impact to the constraints female businesspersons experience in the workplace. To further illuminate the effect of self-perceptions on female businesspersons in the workplace, it may be critical to understand the identities that female businesspersons hold in the workplace, especially since self-concept is derived, in part, from their social identities (Tajfel, 1982; Hogg & Reid, 2006).

Social identities refer to aspects of self that are based on memberships in important social groups, in which people attach value and emotional significance to (Tajfel & Turner, 1979). Individuals usually belong to multiple social groups and possess more than one social identity (Turner & Oakes, 1986). Identities guide how people perceive the world and the organization of their behavior (Tajfel & Turner, 1979). By identifying with a social group, it implies that an individual endorses the group's values and practices, conform to its norms, attribute the characteristics typical for the group to oneself, and display behaviors that are congruent with the identity (Ash & Mael, 1989 as cited in Sacharin, Lee, & Gonzalez, 2009).

Female businesspersons possess both the female and professional identity. The characteristics and values of the female and professional identity are associated with the fundamental dimensions of social perceptions of warmth and competence respectively. Females are typified to be nice, caring, affectionate, and kind, (Eagly, 1987; Fiske, 1998; Hofstede, 1994), traits that reflect warmth and sociability (Costa, Terracciano, & McCrae, 2001; White & Gardner, 2009). Contrastingly, the ideal businessperson is thought to be aggressive, independent, and rational, especially in the North American context. More importantly, these traits mainly reflect agency, such as competence and assertiveness, which are characteristics that are stereotypically associated with men (Schein, 1975; Schein,

Mueller, & Jacobson, 1989; Schein & Mueller, 1992). Given that female businesspersons identify with both these identities, it implies that female businesspersons are able to recognize and internalize the values of competence and warmth, and hence, are likely to perceive themselves as competent and warmth individuals. Hence, regardless of the stereotypic perceptions others have on them; female businesspersons can, in fact, perceive themselves as both competent and warm. However, as detailed in the preceding section, not all female businesspersons perceive themselves as competent and warm individuals. Some perceive themselves as predominantly competent or warm, but not both. This may be because some female businesspersons see their identities as conflicting, and this will be further discussed in the ensuing section.

### **3.1 Identities in Conflict: Responses of Female Businesspersons**

The traits and values associated with the typical businessperson have been found to conflict with those associated with the typical female (e.g., Fox & Hesse-Biber, 1984; Simpson, 1991). As an example, the trait of being agreeable to others (related to their female identity) contradicts the traits of being dominant in front of others (related to their professional identity). Hence, the clash in values creates a sense of internal conflict (e.g., feelings) that drives female businesspersons to think that they must choose one identity over the other, instead of accepting both at the same time (London, 2004; Marshall, 1984). Choosing to identify stronger with one identity in the workplace would have allowed female businesspersons to be perceived either as a competent or as a warm individual. This is evidenced from qualitative interviews conducted with female employees within masculine jobs (e.g., engineering and mining), which showed that some female employees chose their professional identity so as to be perceived as competent, whereas some chose their female identity to be perceived as warm (Kyriakidou, 2011). As such, their behaviors reinforce the

stereotypic perceptions people have of female businesspersons as only being able to be competent or warm individuals.

However, some female businesspersons are comfortable with the seemingly conflicting values of their dual identities. For example, Marshall (1984) showed that some women seemed untroubled with being a female and a manager even though they were aware of the conflict between their identities. Kyriakidou (2011) also reported that some female engineers were comfortable being in a male-dominated environment. These female engineers exhibited relatively more masculine displays at certain times, such as speaking up and being assertive, but they also exhibited femininity at other times. The maneuvering between their dual identities implies that these female employees are more likely to believe that the values of competence and warmth can co-exist and are more likely to perceive themselves as competent and warm individuals. These behaviors are more likely to counteract the predominant stereotype of female businesspersons. In sum, these findings suggest that the different management of female businesspersons' dual identities can have an influence on their perceptions of competence and warmth, specifically to whether competence and warmth can co-exist or whether they exist independently.

### **3.2. Gender-Professional Identity Integration (G-PII) and Perception**

Past research about the process of managing multiple social identities focused mainly on ethnic or cultural identities, and a review of the literature can give us a better understanding of how female businesspersons manage their female and business identities. In research exploring the perspectives of immigrants on their "dominant" and "ethnic" identities, Roccas and Brewer (2002) proposed four strategies individuals use to manage their multiple social identities: intersection (e.g., an Asian American only identifies with other Asian Americans), dominance (e.g., an Asian American with a dominant Asian identity identifies with other Asians), compartmentalization (e.g., an Asian American identifies with

either Asians or Americans but not both), and merger (e.g., an Asian American identifies with both Asians and Americans). The specific strategy people employ depends on the individual differences in the perceived compatibility between different social identities (Roccas & Brewer, 2002). Consistent with their proposal, Benet-Martinez and Haritatos (2005) demonstrated that biculturals differed in identity integration, an individual difference that captures the degree to which two social identities are perceived as compatible or in opposition to each other. It is to note that identity integration proposed by Benet-Martinez and Haritatos (2005) only pertains to the usage of compartmentalization strategy and merger strategy that were proposed by Roccas and Brewer (2002) as these two strategies involves the management of two identities people strongly identify with.

Identity integration has been examined amongst female employees within male-dominated professions, such as engineering, where they are likely to experience acute conflict between their gender and professional identities (Hood & Koberg, 1994; McIlwee & Robinson, 1992). Sacharin, Lee, and Gonzalez (2009) termed the perceived compatibility between work and gender identities as gender-professional identity integration (G-PII). Similar to Benet-Martinez and Haritatos (2005), Sacharin et al. (2009) proposed that individuals with higher identity integration perceive their two identities as compatible and complementary, and do not find it problematic to identify strongly with two groups simultaneously (similar to the merger strategy). In contrast, individuals with lower identity integration perceive an incompatibility between their two identities such that they feel caught between the two identities and prefer to keep them separate, despite the fact that they strongly identify with both identities (similar to the compartmentalization strategy). Given that the values of competence and warmth are associated with the business and female identity respectively, as mentioned in the preceding section, this paper proposes that the management of female businesspersons' dual identities, as captured by G-PII, will influence their beliefs

of competence and warmth, and the perceptions of themselves in relation to these traits. Female businesspersons with higher levels of G-PII, who perceive compatibility between their female and business identity, are more likely to believe that competence and warmth can co-exist (i.e., positive relationship between competence and warmth), and hence, are more likely to perceive themselves as competent and warm individuals. Conversely, female businesspersons with lower levels of G-PII, who prefer to keep their identities separate, will be more likely to believe that competence and warmth cannot co-exist (i.e., negative relationship between competence and warmth). They are more likely to perceive themselves as either competent or warm individuals. By extension, this paper also proposes that level of G-PII will influence female businesspersons' endorsement of the stereotypes related to their gender and business identities. Female businesspersons with higher levels of G-PII, compared to those with lower levels of G-PII, are less likely to endorse the stereotypes of female businesspersons. They are also more likely to perceive other female businesspersons as competent and warm individuals. Female businesspersons with lower levels of G-PII, on the other hand, will be more likely to evaluate other female businesspersons higher on one dimension than the other.

### **3.3. G-PII and Cognitive Frame Switching**

Past studies on G-PII have constantly reported findings on how level of G-PII influences people's behaviors via the cognitive mechanism of frame switching. Hence, to better understand the construct of G-PII, a review of frame switching is crucial. The phenomena of frame switching was initially found as occurring in biculturals who have internalized two cultures that may be activated individually in response to cues to guide biculturals' thoughts and feelings (Hong et al., 2000). Individuals with varying levels of identity integration will react differently to the activated identity, such that they either exhibit an assimilation or contrast effect (Benet-Martinez, Leu, Lee, & Morris, 2002; Cheng, Lee, &

Benet-Martinez, 2006). More integrated individuals will behave in a way that is consistent with the activated identity when network structures linked to that identity is triggered, hence displaying an assimilative effect (i.e., prime-consistent behaviors). Huynh et al.'s (2009) proposed that the comfort and expertise of high BIIs (i.e., individuals with higher levels of BII) allowed them to respond appropriately to cultural primes, accounting for the prime-consistent behaviors. However, less integrated individuals will behave in a way that is opposite to the activated identity, hence displaying a contrast effect (i.e., prime-resistant behaviors). Low BIIs (i.e., individuals with lower levels of BII), who view the two cultures as the chronically polarized (Hyun et al., 2009), are anxious of protecting the other identity that is not activated (Mok & Morris, 2013), resulting in them behaving in prime-resistant ways.

Evidence for the effect of identity integration on frame switching has been found in a couple of studies. Sacharin and colleagues' (2009) examined this effect in the domain of task-orientation or relationship-orientation, which are related to a work orientation and a female orientation respectively. They found that female business school students who perceive their female and business identities as compatible (i.e., high G-PIIs) behaved in a less task-oriented manner when exposed to a female prime than when exposed to a business prime. Hence, an assimilative effect was displayed for those who were high G-PIIs. Conversely, female business school students who perceived their female and business identities as in conflict (i.e low G-PIIs) were more task-oriented when they were exposed to a female prime than when they were exposed to a business prime. Hence, a contrast effect was displayed for those who were individuals with low G-PII.

Mok and Morris (2012) also examined this interaction effect in the domain of attentional focus. Women, compared to men, are proposed to be less able to separate objects from their context visually due to an interdependent self-construal (Phillips, Chapman, & Berry, 2004). Lawyers, on the other hand, should fare better on tasks that require them to

separate objects from their context visually. The study found the same assimilative and contrast effects, such that female lawyers with high G-PIIs were more attentive to focal objects after being primed with a lawyer cue than after being primed with a female cue, and the reverse pattern was found for those with low G-PIIs. These studies essentially demonstrate that female businesspersons' level of G-P II has an impact on their cognitive process that subsequently leads to them displaying different behaviors.

### **3.4. G-P II and Knowledge Systems**

In the earlier sections, I discussed about the importance of self-perceptions on female businesspersons' constraints in the workplace, and an understanding of knowledge systems is critical here as both self-concepts and stereotypes have been said to be part of knowledge structures (Anderson, 2005; see Kihlstrom & Klein, 1994 for a review). In addition, knowledge systems are bundled with social identities, and they usually consist of one's knowledge of the attributes, behaviors, and information that are characteristic of a specific social group (see Devine & Monteith, 1999 for a review). Hence, an understanding of knowledge systems in female businesspersons may provide some preliminary understanding of the underlying psychological mechanisms of identity integration and their perceptions.

For female businesspersons, it seems likely that they will possess both the knowledge systems associated with being a female, and the knowledge system associated with being a businessperson. This is evident in Cheng and colleagues' (2008) study which primed both the female and the engineer identities in female engineers and found that there was enhanced creativity that was attributed to the simultaneous access of knowledge systems related to both identities. Moreover, they found that identity integration moderated individuals' ability to simultaneously access the knowledge. When asked to create a new mobile communication device (i.e., taps into aspects of their professional identity related to being an engineer) that would appeal to women (i.e., taps into aspects of their female identity), the ideas generated



by female engineers with higher levels of G-P-II were judged to be more creative than those provided by those with lower levels G-P-II. The same pattern was observed amongst biculturals when they were asked to create a fusion dish that incorporated elements from both their cultures.

Although the explanation behind the inferior creative performance of low identity integrators was not explicitly stated in Cheng et al.'s (2008) study, the fact that they tend to keep their social identities separate implies that they were not simultaneously accessing the knowledge from both identity-related knowledge systems in their tasks. Thus, this may explain the less creative scores of low identity integrators who were likely to only be accessing one knowledge system at a point of time. In this way, level of G-P-II may potentially influence female businesspersons' simultaneous access of elements from the knowledge system related to their female identity (e.g., attributes and behaviors relating to warmth) and the knowledge system related to their professional identity (e.g., attributes and behaviors relating to competence).

### **3.5. G-P-II and Ego Depletion**

From the preceding section, it is proposed that female businesspersons with high and low G-P-II differ in the access of the knowledge systems related to their female and professional identities due to the ways they manage their identities. To examine if female businesspersons with varying levels of G-P-II do indeed access their knowledge systems related to their identities differently, it may be worthwhile to investigate the amount of effort required to access their knowledge systems. I propose when there is a need to simultaneously apply knowledge from both knowledge systems, it would require more self-control or conscious effort from female businesspersons with lower levels of G-P-II than female businesspersons with higher levels of G-P-II to do so. Given that people have limited resource, the conscious effort of accessing both identity-related knowledge systems may then

lead to ego-depletion. This is especially more so for female businesspersons with lower levels of G-PII than female businesspersons with higher levels of G-PII.

Self-control refers to conscious and effortful process of restraining an impulse in order to alter or override one's responses, including thoughts, emotions and actions (Baumeister, 2002). Activities involving controlled (as opposed to automatic) processing, active (as opposed to passive) choice, initiating, and inhibiting behaviors usually requires self-control (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Muraven, Tice, and Baumeister (1998) proposed a strength model that is based on three main premises: 1) the process of self-control consumes a limited resource (later termed ego-strength; Muraven and Baumeister, 2000), which may eventually be depleted (i.e., ego depleted); 2) successful attempts at self-control depends on the availability of this resource; and 3) all activities requiring self-control consumes this resource. Essentially, this model predicts that activities requiring self-control would deplete the limited ego-strength one possess, which would subsequently leads ego-depletion. This leads to ineffective attempts at self-control.

Ego depletion refers to a state in which the self does not have all the resources it has normally, which then renders the self temporarily less able to function normally in activities that require self-control (Baumeister, Muraven, & Tice, 2000; Baumeister & Vohs, 2007). Vohs, Baumeister, and Ciarocco's (2005) study on self-presentation demonstrated that individuals who presented themselves in ways that were not their usual experienced impaired self-regulation compared to individuals who behaved normally. This implies that behaving in unfamiliar ways requires self-control as individuals will have to consciously and deliberately inhibit their dominant response. As such, low G-PIIs who are more likely to only apply one identity-related knowledge system, accessing and applying their identity-related knowledge systems simultaneously is counter-normative for them and they will be more likely to consume more cognitive resources in their attempt to consciously draw knowledge from both

female and professional identity knowledge systems at the same time. Since they will have to inhibit their dominant response, female businesspersons with low G-PII are more likely to experience ego-depletion than female businesspersons with high G-PII, who are experienced with accessing their both female identity and professional identity knowledge systems simultaneously. Since warmth and competence are central traits to the female identity and to the professional identity respectively, this paper will be interested in looking at female businesspersons with different levels of G-PII and their access of knowledge systems with regard to warmth and competence.

## Chapter 4. THE PRESENT RESEARCH

According to the literature review presented in the preceding sections, there are two central aims to this paper, which are examined via two studies. Firstly, this paper examines the role of G-PII in accounting for the differences in female businesspersons' perceptions of themselves and other female businesspersons. In addition, this paper will also explore the possible relationship between G-PII and female businesspersons' their endorsement of gender-related stereotypes. The following hypotheses will be tested in Study 1:

H1: There will be a positive relationship between participants' level of G-PII and their self-perceived co-existence of competence and warmth, such that participants with higher levels of G-PII would perceive more co-existence of competence and warmth than participants with lower levels of G-PII.

H2: There will be a negative relationship between participants' level of G-PII on the level of endorsement of the stereotypes of female businesspersons (i.e., female businesspersons are only competent or warm individuals), such that participants with higher levels of G-PII would endorse the stereotypes less than participants with lower levels of G-PII.

H3: There will be an interaction effect of the target professionals' gender and participants' level of G-PII on the perceived co-existence of competence and warmth of the professional.

*H3a:* Participants with higher levels of G-PII will perceive more co-existence of competence and warmth of a female professional than participants with lower levels of G-PII.

*H3b:* There will not be a significant difference between participants with higher levels of G-PII and participants with lower levels of G-PII in the perceived co-existence of competence and warmth of a male professional.

The second aim of this paper is to explore the relationship between G-PII and female businesspersons' access to their identity-related knowledge systems and its impact on their cognitive resources. Specifically, the following hypothesis will be tested in Study 2:

H4: Participants with lower levels of G-PIIs will be more ego-depleted than participants with higher levels of G-PIIs when asked to process information regarding a female professional with high competence and high warmth simultaneously.

## Chapter 5: STUDY 1

### Method

**Participants.** A total of 98 female undergraduate students from Singapore Management University took part in the study and were compensated with one course credit upon completion of the study. However, as two participants did not have business majors, and two other participants had incomplete responses, a sample of 94 participants was left. Since this research is interested in the perception of female professionals, participants must identify with both their gender and professional identities to be considered demographically similar to a female professional. Thus, participants who did not strongly identify with one, or both, of these identities (i.e., gave a rating of 4 and below), were left out in the main analysis. Although the use of female business students as participants may raise concerns with regard to external validity, research conducted by Sacharin et al. (2009) and Cheng et al. (2008) have demonstrated that female students are a valid sample in providing preliminary insights to potential responses and behaviors of female businesspersons in the workplace. Moreover, participants were mostly second and third year students (mean year = 2.91 years,  $SD = .85$ ), all of whom were pursuing a business major (mean length = 13.64 months,  $SD = 10.82$ ) and have indicated that they are likely to pursue a business-related career upon graduation (mean likelihood = 4.95 on a 6-point Likert scale,  $SD = .98$ ).

**Procedure.** There were four sections in this study. Participants first completed an online questionnaire, which consisted of demographic questions, the G-PII Scale, and a list of competence-related and warmth-related traits that participants rated themselves on. Thereafter, participants proceeded to the second section of the study where they were required to read a short passage on a successful venture capitalist. Participants were randomly assigned to the passage with either a female protagonist or a male protagonist. In the third section of the study, participants were required to recall the contents of the short passage.

This was done in order to examine the way they conceptualized and fitted the information given to them into a certain stereotype. It also allowed us to ascertain that participants had read and processed the information in the passage. Participants then proceeded to complete another online survey where they evaluated the protagonist in relation to competence and warmth using the same list of competence and warmth traits that participants rated themselves on. They also indicated how much they would have liked the protagonist. Lastly, to assess the awareness and endorsement of the stereotypes of female professionals, participants were required to respond to a statement on the stereotypes of female professionals.

**Materials and measures.** Participants responded to the measures and materials detailed below.

***Gender-Professional Identity Integration Scale.*** This 32-item scale measures the perceived compatibility between a female professional's gender and professional identity and was adapted from BIIS-1 (Benet-Martínez, 2003) and BIIS-2 (Huynh, 2009). Participants were required to respond to statements such as "I feel torn between my gender and business identities" on a 5-point scale (1 = strongly disagree, 5 = strongly agree). A full list of the items is provided in Appendix 1.

***Competence and Warmth Traits.*** This assesses participants' perception of competence and warmth of themselves and others. Trait items were adapted and combined from studies that examined perceptions of competence and warmth (Fiske et al., 2002; Judd et al., 2005; Abele & Wojciszke, 2007). Participants were presented with these competence and warmth related traits, such as "Caring" and "Skilled", and rated the applicability of each trait to themselves and the target professional that they read about on a 7-point scale (1 = Not applicable, 7 = Always applicable). A full list of the traits used is provided in Appendix 2.

***Short passage on professional.*** This passage was adapted from the Harvard Business Case on Heidi Roizen (McGinn & Tempest, 2009), and these extracts were chosen to suggest that the protagonist possessed both competence-related and warmth-related traits. Similar to Flynn and Anderson's (2003) study, participants were randomly assigned to the passage with either a female protagonist (Rachel) or a male protagonist (Robert). An example of the passage is provided in Appendix 3.

***Likability of professional.*** Participants responded to the item, "How much do you think you would like Rachel (Robert) if you met her (him)" on a 9-point scale (1 = not at all, 9 = very much).

***Awareness and endorsement of stereotypes.*** Adapting from Levy, Stroessner, and Dweck (1998), this statement was, "Some stereotypes are true. Female professionals are usually stereotyped as *Career Women*, where they are perceived as competent but cold, or *traditional women*, where they are perceived as warm but incompetent". Participants were asked if they were aware of these stereotypes (1= aware, 2= not aware) and indicated the extent to which they personally believed that these stereotypes of female professionals were true on a 5-point scale (1 = not at all, 5 = extremely true).

## **Results**

**G-PII Scale.** A confirmatory factor analysis (CFA) was conducted to examine the factor structure of the G-PII measure. Research on BII has suggested that there are two components in the BII construct, which are the distance (versus blendedness/compartimentalization) and conflict (versus harmony) (Benet-Martinez & Haritatos, 2005). The former refers to the extent to which the identities are separated from one another (i.e., identity alternation) (Benet-Martinez & Haritatos, 2005), and the latter refers to the extent to which the identities contradict one another (i.e., role conflict) (Baumeister, 1986; Cheng & Lee, 2009; Goode, 1960). However, it is unclear if same two



components – distance and conflict – are also present in G-PII. Also, as noted by Wallen, Mor, & Devine (2014), studies on G-PII (read: Sacharin et al., 2009; Cheng et al., 2008; Mok and Morris, 2012) have inconsistently used different scales to measure participants' level of G-PII. Moreover, these scales used were not examined for their factor structure or validated empirically. Hence, given that the G-PII scale employed in this study is newly developed, it is crucial to validate this measure for the construct of G-PII.

To ensure sufficient sample size<sup>2</sup> for the CFA, responses for the G-PII scale used in both Study 1 and Study 2 were combined. A total sample size of 162 was used in this analysis. The fit indices for the 32-items two-factor model implied a poor fit ( $\chi^2(463) = 796.20, p < .001$ ; CFI = .81; RMSEA = .067), but it was better than the fit for a one-factor model ( $\chi^2(464) = 887.35, p < .001$ ; CFI = .76; RMSEA = .075), although the difference was not significant,  $\chi^2_{\text{change}}(1) = 91.15, p < .001$ .

To improve on the model fit, items with high standardized residual covariances and non-significant standardized regression coefficients were removed. Modification indices were also examined but covariances were not added between the error terms within the same factor since none produced great parameter change. After making the modifications, the resulting measure consisted of 18 items. The fit indices showed a relatively good fit for a two-factor model ( $\chi^2(134) = 179.60, p = .005$ ; CFI = .95; RMSEA = .046), and it was better than the fit for a one-factor model ( $\chi^2(135) = 244.57, p < .001$ ; CFI = .89; RMSEA = .071), although the difference was not significant,  $\chi^2_{\text{change}}(1) = 64.97, p < .001$ . The Cronbach Alpha for the distance factor in the G-PII scale is  $\alpha = .68$ , which is unsatisfactory but further removal of items resulted in a poorer model fit. The Cronbach Alpha for the conflict factor in the G-PII scale, on the other hand, is  $\alpha = .90$ , which is satisfactory. The distance factor and the conflict

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<sup>2</sup> The factor structure of G-PII was analyzed with the sample size obtained in Study 1 (N=82) and the sample size obtained in Study 2 (N=80) independently (see Appendix 4). As it is recommended to have a minimum sample size of 150 when conducting CFA (Hair, Anderson, Tatham, & Black, 1998), data was combined from both studies to meet sample size requirement.

factor are significantly correlated to each other,  $r = .41, p < .001$ . The resulting 18 items of the revised G-P-II scale are bolded in Appendix 1. More focus will be placed on the conflict subscale than the distance subscale for subsequent analyses due to the low reliability of the distance factor.

**Competence and warmth traits.** Since trait items were adapted and combined from studies that have examined perceptions of competence and warmth (Fiske et al., 2002; Judd et al., 2005; Abele & Wojciszke, 2007), reliability analysis was conducted to examine if the combined items measured competence and warmth reliably. The Cronbach Alphas are  $\alpha = .85$  and  $\alpha = .90$  for rating themselves and another target individual on competence respectively, both of which are satisfactory. The Cronbach Alphas are  $\alpha = .88$  and  $\alpha = .93$  for rating themselves and another target individual on warmth respectively, both of which are satisfactory.

**Descriptives and Correlations among variables.** The mean level of G-P-II in this sample of participants was  $M = 3.61, SD = .49$ . Level of G-P-II was highly, and significantly, correlated to level of conflict ( $M = 3.55, SD = .59$ ),  $r = .96, p < .001$ , and level of distance ( $M = 3.73, SD = .47$ ),  $r = .70, p < .001$ . Participants' strength of identification with their gender identity ( $M = 7.28, SD = 1.11$ ), and it is significantly correlated with their strength of identification with their professional identity ( $M = 6.90, SD = 1.09$ ),  $r = .27, p = .02$ . Participants' strength of identification with both gender and professional identities were not significantly correlated to their level of G-P-II, and their level of conflict. However, participants' level of distance was significantly correlated to their strength of identification with their professional identity,  $r = .33, p = .003$ , but not to their strength of identification with their gender identity.

Participants' ratings of their self-perceived warmth ( $M = 5.80, SD = .62$ ) was significantly correlated to their self-perceived competence ( $M = 5.26, SD = .77$ ),  $r = .51, p <$

.001. This indicates that self-perceived competence and self-perceived warmth were moderately correlated for participants in general.

Participants' perceived competence rating for the female professional was  $M = 6.06$ ,  $SD = .69$ , and participants' perceived warmth rating for the female professional was  $M = 6.09$ ,  $SD = .69$ . These ratings were significantly correlated,  $r = .77$ ,  $p < .001$ . Participants' perceived competence rating of the male professional ( $M = 5.94$ ,  $SD = .61$ ) was also significantly correlated to their perceived warmth ratings ( $M = 6.10$ ,  $SD = .63$ ),  $r = .75$ ,  $p < .001$ . These results indicate that both female and male professionals were perceived to be high in both competence and warmth.

Participants' level of endorsement of female businesspersons stereotypes ( $M = 2.31$ ,  $SD = 1.05$ ) was negatively correlated with level of G-II ( $r = -.42$ ,  $p < .001$ ), level of distance ( $r = -.32$ ,  $p < .001$ ) and level of conflict ( $r = -.40$ ,  $p < .001$ ). Level of endorsement was also negatively correlated to awareness of stereotypes,  $r = .26$ ,  $p = .02$ . Table 1 and Table 2 provide the summary of the means, standard deviations, and correlations of the variables.

Co-existence of self-competence and warmth was operationalized as the absolute discrepancy between participants' ratings of competence and warmth of themselves and of others. A lower score indicates that competence and warmth co-exists in themselves and in others.

Table 1

*Summary of Means and Standard Deviations of Variables*

Variable	<i>M</i>	<i>SD</i>
G-PHI	3.61	.49
Conflict	3.55	.59
Distance	3.73	.47
Gender identification	7.28	1.11
Professional identification	6.90	1.09
Self-perceived competence	5.26	.77
Self-perceived warmth	5.80	.62
Co-existence of self competence and warmth	.68	.56
Other-perceived competence (female)	6.06	.69
Other-perceived warmth (female)	6.09	.69
Co-existence of other competence and warmth (female)	.34	.31
Other-perceived competence (male)	5.94	.61
Other-perceived warmth (male)	6.10	.63
Co-existence of other competence and warmth (male)	.35	.30
Awareness of stereotype	1.17	.38
Level of endorsement of stereotype	2.31	1.05

Table 2

*Summary of Correlations between variables*

Variables	GPII	Conflict	Distance	Pro_ id	Gender _id	Self- comp	Self- warm	Self- coex	Other- comp	Other- warm	Other- coex	Aware	Endorse
GPII	1	.96**	.70**	0.2 <sup>+</sup>	0.17	.29**	0.15	-0.13	0.13	0.15	.22*	0.19 <sup>+</sup>	-.42**
Conflict	.96**	1	.48**	0.12	0.16	.27*	0.1	-0.15	0.08	0.12	.22*	.27*	-.40**
Distance	.70**	.48**	1	.33**	0.13	0.21	.22*	-0.02	0.21	0.19 <sup>+</sup>	0.14	-0.08	-.31**
Pro_id	0.2 <sup>+</sup>	0.12	.33**	1	.27*	.31**	0.16	-0.1	0.13	0.09	-0.1	-0.03	-0.15
Gender_id	0.17	0.16	0.13	.27*	1	0.21 <sup>+</sup>	-0.08	-0.15	0.07	0.02	0.09	0.17	-.25*
Self-comp	.29**	.27*	0.21	.31**	0.21 <sup>+</sup>	1	.51**	-.54**	.28**	.28*	-0.21 <sup>+</sup>	0.15	-0.21 <sup>+</sup>
Self-warm	0.15	0.1	.22*	0.16	-0.08	.51**	1	0.16	.29**	.38**	-0.07	-0.15	-0.05
Self-Coex	-0.13	-0.15	-0.02	-0.1	-0.15	-.54**	0.16	1	-0.01	0.04	.25*	-.29**	0.15
Other-comp	0.13	0.08	0.21 <sup>+</sup>	0.13	0.07	.28**	.29**	-0.01	1	.76**	-0.19 <sup>+</sup>	-0.22	-0.04
Other-warm	0.15	0.12	0.19 <sup>+</sup>	0.09	0.02	.28*	.38**	0.04	.76**	1	-0.06	-0.2 <sup>+</sup>	-0.06
Other-coex	.22*	.22*	0.14	-0.1	0.09	-0.21	-0.07	.25*	-0.19	-0.06 <sup>+</sup>	1	-0.14	-0.15
Aware	0.19 <sup>+</sup>	.27*	-0.08	-0.03	0.17	0.15	-0.15	-.29**	-0.22	-0.2	-0.14	1	-.26*
Endorse	-	-.40**	-.31**	-0.15	-.25*	-0.21 <sup>+</sup>	-0.05	0.15	-0.04	-0.06	-0.15	-.26*	1
		.42**											

Note: <sup>+</sup> $p < .10$  \* $p < .05$ . \*\* $p < .01$

**Self-perceived co-existence of competence and warmth.** Hypothesis 1 predicts that there will be a positive relationship between participants' G-PII and the likelihood of perceived co-existence of competence and warmth. To test this, a regression analysis is employed. Since results of the CFA showed that G-PII is a two-factor model, the conflict subscale and the distance subscale of G-PII served as independent variables in this analysis. Regression analysis was first conducted using the conflict subscale as the independent variable. A second regression analysis was then conducted using the distance subscale of G-PII. Level of conflict and distance were reversed coded such that a higher score of conflict and distance reflect lower levels of conflict and lower levels of distance.

The first regression model included the conflict subscale of G-PII (continuous) as a predictor. Strength of identification with gender identity (continuous) and strength of identification with professional identity (continuous) were added as covariates as strength of identification with an identity have been shown to correlate with identity knowledge (LaFromboise, Coleman, & Gerton, 1993). These variables were all centered for analysis. The analysis yielded no main effects for the covariates ( $ps > .1$ ). The effect of the conflict subscale of G-PII on self-perceived co-existence of competence and warmth was also insignificant,  $\beta = -.12$ ,  $t(78) = -1.09$ ,  $p = .28$ . (see Table 3).

Table 3

*Summary of regression analysis predicting self-perceptions (N=82)*

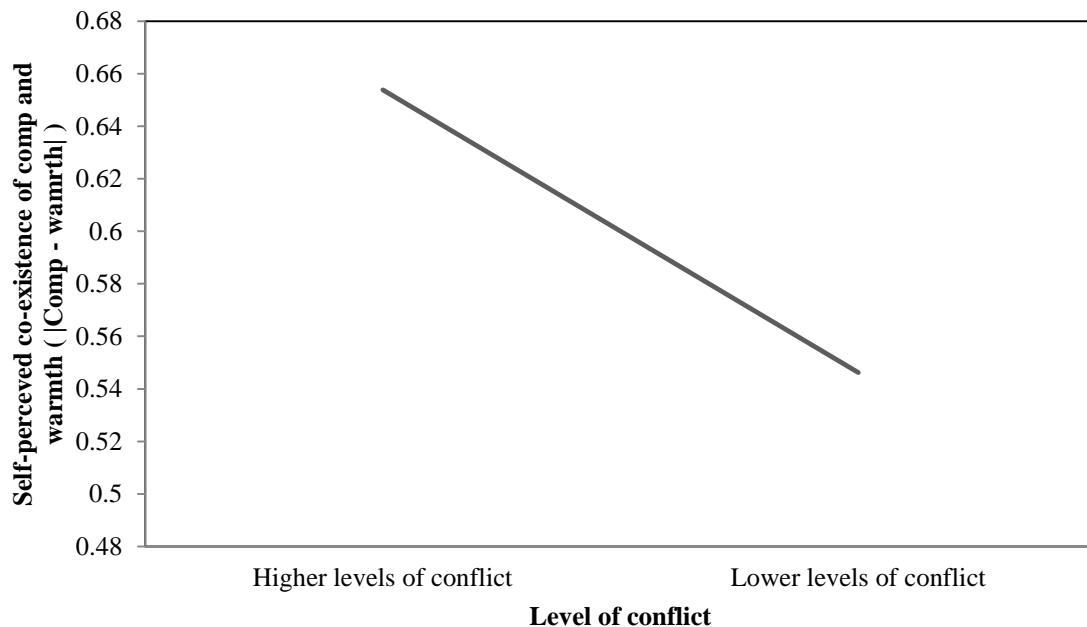
Variable	<i>B</i>	SE <i>B</i>	<i>B</i>
Professional Identity	-.03	.06	-.05
Gender Identity	-.06	.06	-.11
G-PII (conflict)	-.12	.11	-.12
$R^2$			.04
$F$			1.07
$\omega^2$			.002

*Note:* All variables were mean-centered.

Post-hoc power analysis using G-Power computer program revealed that the observed power was 0.44 with a small effect size of  $f^2 = .04$ . Hence, although there is a positive trend for the relationship between participants' level of conflict and their perceived co-existence of competence and warmth (Figure 1), there is no explanatory power of participants' level of conflict on self-perceived co-existence of competence and warmth. Participants with higher levels of conflict did not differ from participants with lower levels of conflict in their self-perceptions.

Figure 1

*Self-perception and Level of Conflict (N=82)*



A second regression analysis was conducted with the distance subscale as the independent variable. Similarly, the main effect of the distance subscale on self-perceived co-existence of competence and warmth was not significant,  $\beta = .02$ ,  $t(78) = .18$ ,  $p = .86$ . In sum, both levels of conflict and distance between gender and professional identities did not influence female business students' self-perceived co-existence of competence and warmth.

Further analyses were conducted to make sense of this finding. Regression analyses were employed to examine the effect of level of conflict on self-perceived competence and

warmth ratings independently. Results revealed that the level of conflict did not predict significantly self-perceived warmth,  $\beta = .10$ ,  $t(78) = .91$ ,  $p = .37$ . On the other hand, its effect on self-perceived competence was significant,  $\beta = .23$ ,  $t(78) = 2.13$ ,  $p = .04$  (see Table 4). Female business students with lower levels of conflict and higher levels of conflict were similar in their self-perceived warmth. However, they differed in their self-perceived competence; female business students with lower levels of conflict perceived higher levels of self-competence compared to students with higher levels of conflict. A similar analysis was conducted using the distance subscale of G-P-II. The results showed no effect of level of distance on self-perceived competence,  $\beta = .12$ ,  $t(78) = 1.07$ ,  $p = .29$ , and only a marginal effect of level of distance perceived warmth,  $\beta = .20$ ,  $t(78) = 1.71$ ,  $p = .09$ .

Table 4

*Summary of regression analysis predicting competence self-ratings and warmth self-ratings (N=82)*

Variable	Self-perceived Competence			Self-perceived Warmth		
	<i>B</i>	SE <i>B</i>	$\beta$	<i>B</i>	SE <i>B</i>	$\beta$
Professional Identity	.18	.08	.25**	.11	.07	.19
Gender Identity	.07	.08	.10	-.08	.06	-.15
G-P-II (Conflict)	.29	.14	.26**	.11	.12	.10
$R^2$			.16			.05
$F$			4.94**			1.40
$\omega^2$			.13			.01

Note: \* $p < .05$ . \*\* $p < .01$ .

**Endorsement of stereotypes.** Hypothesis 2 predicts that there will be a negative relationship between participants' G-P-II and their endorsement of the stereotypes of female businesspersons. To examine this, the conflict and distance subscales of G-P-II, together with control variables (i.e., strength of gender and professional identification), were first centered. 68 out of 82 participants were aware of the female businessperson stereotypes, hence, awareness of stereotypes (1= aware, 2 = unaware) was also included as a control variable.



Regression analyses were conducted for the conflict and distance factors separately for level of stereotype endorsement. Level of conflict between female business students' gender and professional identities significantly predicted the level of endorsement of female businesspersons stereotypes,  $\beta = -.33$ ,  $t(77) = -3.06$ ,  $p = .003$ ,  $\Delta R^2 = .10$  (see Table 5). This finding supports the prediction that participants with lower conflict between their dual social identities endorsed the female businesspersons stereotypes less than female business students with higher levels of conflict between their identities<sup>3</sup>. A similar regression was conducted using the distance subscale of G-P-II as the independent variable. Levels of distance between female business students' gender and professional identities also significantly predicted the level of endorsement of female businesspersons stereotypes,  $\beta = -.31$ ,  $t(77) = -2.88$ ,  $p = .005$ .

Table 5

*Summary of regression analysis predicting endorsement (N = 82)*

Variable	<i>B</i>	SE <i>B</i>	$\beta$
Professional Identity	-.07	.10	-.08
Gender Identity	-.14	.10	-.15
Awareness of stereotypes	-.40	.30	-.15
G-P-II (conflict)	-.58	.19	-.33**
$R^2$			.22
$F$			5.03**
$\omega^2$			.17

*Note: \* $p < .05$ . \*\* $p < .01$ .*

In sum, the findings indicate that female business students with lower levels of conflict, and lower levels of distance, between their gender and professional identities

<sup>3</sup> I conducted further analysis to examine if the effect of the level of conflict and level of distance on endorsement would be different when female business students are aware of the stereotypes and when they are not aware of the stereotypes. The effect of level of conflict between female business students' gender and professional identities on level of endorsement of female businesspersons stereotypes was significant when participants were aware,  $b = -.60$ ,  $t(76) = -3.10$ ,  $p = .003$ , CI [-.98, -.21], and insignificant when they were not aware,  $b = .02$ ,  $t(76) = .02$ ,  $p = .98$ , CI [-2.11, 2.15].

endorsed these stereotypes less than female business students with higher levels of conflict, and higher levels of distance, between their dual social identities.

**Co-existence of competence and warmth of target professional.** Hypothesis 3 predicts that there will be an interaction effect between participants' G-P-II and the target's gender on the perceived co-existence of competence and warmth of another individual. Specifically, I predict that there will be a difference between participants with higher identity integration and lower identity integration when evaluating a female professional, but not when evaluating a male professional.

46 participants were randomly assigned to the female target condition and 36 participants were randomly assigned to the male target condition. T-tests showed that participants did not significantly differ in their age, year of study, length of study in a business major, strength of identification with their professional and gender identities, and likelihood of pursuing a career related to business across conditions. Level of G-P-II, conflict and distance of participants also did not differ significantly across conditions. To ensure that participants read the passage on the target professional thoroughly, they were asked to describe the target person after reading the passage. The amount of time spent on describing the target person also did not differ significantly across conditions (See Table 6).

Table 6

*Summary of variables across Conditions (N=82)*

Variables	Female		Male	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	21.24	1.06	21.44	1.36
Year	2.84	.88	3.00	.83
Business Major Length	13.62	11.12	13.67	10.58
Professional Identity	6.76	1.13	7.09	1.02
Gender Identity	7.17	1.22	7.43	.96
G-PII	3.59	.53	3.64	.44
Conflict	3.53	.62	3.58	.56
Distance	3.70	.49	3.76	.45
Business Career	4.93	.97	4.99	1.00
Task time	102.06	42.77	96.01	34.7

To examine Hypothesis 3, regression analysis was employed. Co-existence of competence and warmth ratings of the target person was operationalized as the absolute discrepancy between participants' ratings of the perceived competence and warmth of the target person. This served as the dependent variable in this analysis. In the regression model, the conflict subscale of G-PII (continuous) was included as the independent variable and the gender of the target person (1= female, 2= male) was added as the moderator. Strength of identification with gender identity (continuous) and strength of identification with professional identity (continuous) were included as covariates. There were no significant main effects found for the covariates ( $ps > .1$ ). There was no significant effect found for target's gender,  $\beta = .01$ ,  $t(76) = .11$ ,  $p = .92$ , but there was a marginal effect found for female business students' levels of conflict on the co-existence of competence and warmth for the target person,  $\beta = .61$ ,  $t(76) = 1.80$ ,  $p = .08$ . The two-way interaction effect between levels of conflict and target's gender was also insignificant,  $\beta = -.40$ ,  $t(76) = -1.21$ ,  $p = .23$  (see Table 7).

Table 7

Summary of regression analysis predicting co-existence of competence and warmth of target person ( $N = 82$ )

Variable	$B$	SE $B$	$\beta$
Professional Identity	-.04	.03	-.14
Gender Identity	.02	.03	.07
G-PII (Conflict)	.31	.17	.61 <sup>+</sup>
Condition (Gender)	.01	.07	.01
G-PII (Conflict) X Cond (Gender)	-.14	.12	-.40
$R^2$			.09
$F$			1.47
$\omega^2$			.00003

Note: <sup>+</sup> $p < .10$  \* $p < .05$ . \*\* $p < .01$ .

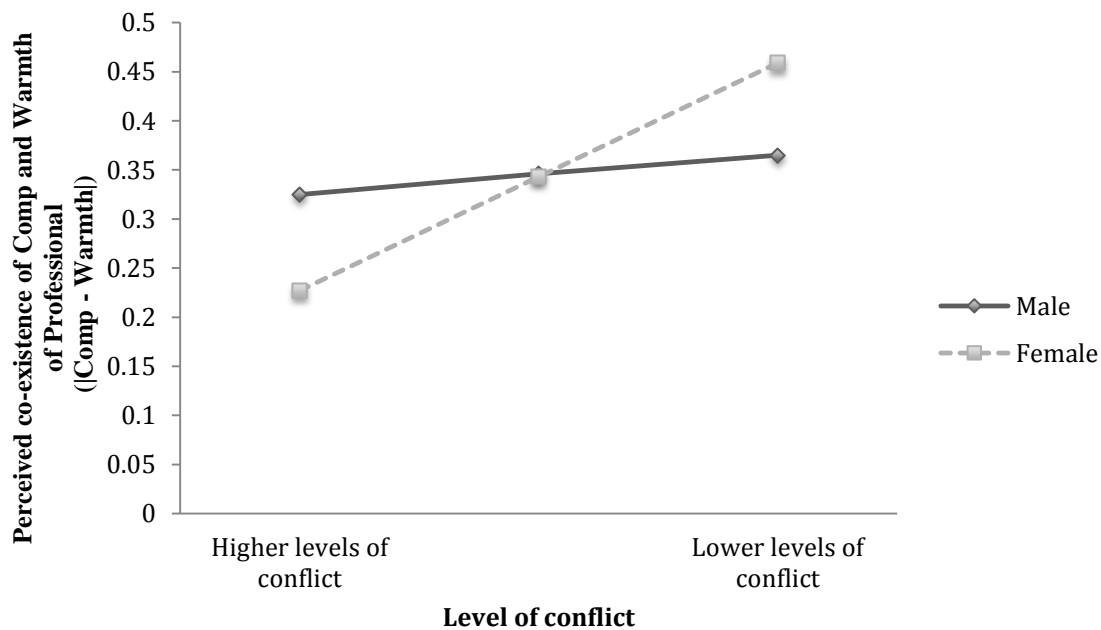
Simple slope analyses revealed that female business students' level of conflict had a significant effect on their perception of the target professional when the target professional was female,  $b = .17$ ,  $t(76) = 2.31$ ,  $p = .02$ , CI [ .02, .31], but not significant when the target professional was male,  $b = .03$ ,  $t(76) = .32$ ,  $p = .75$ , CI [-.15, .21].

Another regression analysis was conducted using the distance subscale as the independent variable. Results showed that there was neither a significant main effect of the level of distance between female business students' dual social identities nor a significant main effect of the gender of the target professional on female business students' perception of the target professional ( $ps > .10$ ). More crucially, there was no significant interaction effect of female business students' level of distance and the gender of the professional on their perceptions of the professional,  $\beta = .03$ ,  $t(76) = .08$ ,  $p = .94$ . Simple slopes analyses yielded no main effects of levels of distance between female business students' dual social identities on the perceived co-existence of competence and warmth of the professional in both female and male professional conditions.

In sum, the findings showed that female business students with varying levels of conflict differed in their perceptions of another professional only when the gender of the professional was female, and not when the gender of the professional was male (See Figure 2). Contrary to my prediction, female business students with lower levels of conflict between their gender and professional identities actually had more discrepant ratings of competence and warmth of the female professional than students with higher levels of conflict. Levels of distance between female business students' dual social identities, however, did not predict the perceived co-existence of competence and warmth in both female and male professional.

Figure 2

*Perception of Target Individual and Level of Conflict across conditions (N=82)*



**Likability.** A regression analysis was conducted to examine if female business students' level of conflict between their gender and professional identities would influence their liking of the professional. The analysis yielded an insignificant effect of female business students' level of conflict between their dual social identities on liking of the target professional,  $\beta = .45$ ,  $t(76) = 1.33$ ,  $p = .19$ . The gender of the target professional also did not significantly predict the extent to which participants liked the target professional,  $\beta = .01$ ,  $t$

(76) = .12,  $p = .90$ . The interaction between the gender of the target professional and female business students' level of conflict between their dual social identities on liking of the professional was also insignificant,  $\beta = -.23$ ,  $t(76) = -.68$ ,  $p = .50$ . However, simple slope analyses revealed that the effect of female business students' level of conflict on the likability of the professional was significant only when the professional was female,  $b = .55$ ,  $t(76) = 2.04$ ,  $p = .045$ , CI [.01, 1.09], and not when the professional was male,  $b = .26$ ,  $t(76) = .77$ ,  $p = .44$ , CI [-.41, .93].

A similar regression analysis was conducted with the distance subscale of G-PII as the independent variable. The analysis yielded a significant effect of female business students' level of distance between their dual social identities on liking of the target professional,  $\beta = .90$ ,  $t(76) = 2.78$ ,  $p = .007$ . The gender of the target professional did not significantly predict the extent participants liked the target professional,  $\beta = .02$ ,  $t(76) = .16$ ,  $p = .88$ . The interaction term between the gender of the target professional and female business students' level of distance between their dual social identities on liking of the professional was significant,  $\beta = -.64$ ,  $t(76) = -2.00$ ,  $p = .049$ . Simple slope analyses also revealed that the effect of female business students' level of distance on the likability of the professional was significant only when the professional was female,  $b = 1.11$ ,  $t(76) = 3.29$ ,  $p = .002$ , CI [.44, 1.79], and not when the professional was male,  $b = .07$ ,  $t(76) = .18$ ,  $p = .86$ , CI [-.75, .90].

In sum, the findings revealed that female business students with lower levels of conflict between their dual social identities liked the female professional more than students with higher levels of conflict. This was not the case for the male professional. Female business students with lower levels of conflict and higher levels of conflict expressed similar extent of liking of the male professional. This pattern of finding was also evident when the distance subscale of G-PII employed as the independent variable. Female business students with lower levels of distance between their social identities liked the female professional

more than students with higher levels of distance between their social identities. Female business students with lower levels of distance between their social identities and student with higher levels of distance between their social identities expressed similar extent of liking of the male professional.

## **Discussion**

**G-PII Construct.** The CFA and reliability analysis resulted in a 18-item G-PII scale, and that the G-PII construct was found to have a two-factor structure consisting of conflict and distance components. Although the conflict subscale had high reliability, the reliability of the distance subscale was unsatisfactory. This maybe due to participants' lack of actual working experiences; they may not have a good sense about how different it could be between being a female and being a professional at work. On the other hand, as the conflict subscale is more affective in nature, female business students were probably more able to relate to feelings of conflict. Higher reliability of the distance scale could be found if a sample of female working professionals was used, especially if this sample comes from a male-dominated industry (e.g., engineering) or holds male-typical job positions (e.g., leaders). The salient and drastic difference between being a female and being a professional in these jobs may allow female working professionals to respond to the distance items more accurately.

**Self-perceived co-existence of competence and warmth.** In this study, female business students were asked to rate themselves on competence-related traits and warmth-related traits. After controlling for the strength of their gender and business identities, female business students' levels of conflict between their gender and professional identities, and their level of distance between their dual social identities, did not influence them to perceive themselves as competent and warm simultaneously. This finding does not support Hypothesis 1, which predicted that female business students differ on their self-perceived co-existence of

competence and warmth as a function of their level of conflict, and level of distance, between their dual social identities.

The lack of a significant finding could be due to the lack of a specific context when female business students were asked to rate themselves on competence and warmth. Specifically, how they perceive themselves along these traits may differ in contexts such as one in which has salient cues that remind them of their conflicting social identities. Future studies should examine female businesspersons' self-perceptions on competence and warmth with relevance to different social surroundings. For instance, given that the workplace is a specific context where there are salient cues that remind female businesspersons of their dual social identities, female businesspersons could be asked to "rate how you perceive yourself in the workplace in relevance to the list of competence and warmth traits". To compare if their self-perceptions are different in another social contexts, female businesspersons can be provided a more neutral context where their conflicting social identities are not salient (e.g., "rate how you perceive yourself when you are with your friends in relevance to the list of competence and warmth traits").

The lack of a significant finding to support Hypothesis 1 could also be due to the operationalization of co-existence of competence and warmth in this study, which was the absolute discrepancy between participants' ratings of their self-perceived competence and self-perceived warmth. Operationalizing co-existence of competence and warmth using their self-perceived competence and warmth ratings tells us little about how female business students perceive competence and warmth to exist simultaneously. Future studies should include more direct questions of their self-perceived co-existence of competence and warmth. For instance, female businesspersons should instead be asked "to what extent do you see yourself as a competent and warm individual" based on 5-point Likert scale (1=not at all, 5=a great extent).



Female business students' level of conflict was found to predict their self-perceived competence. Female business students with lower levels of conflict rated themselves higher on competence while students with higher levels of conflict saw themselves as less competent. This finding is somewhat consistent with some accounts of female businesspersons and engineers who doubt their abilities and skills in male-typical jobs (Jackson, 2001; Tapia & Kvasny, 2004). Female business students' level of conflict did not predict their self-perception of their warmth, which suggests that female business students' perception of their level of warmth is similar across the different levels of conflict. This is perhaps due to their relatively more stable identification with their gender identity, relative to their professional identity. Females possess their gender identity since a young age, hence their identification with their gender is more resistant to change and variation. The lack of significant findings when the distance subscale of G-PII was employed could be due to the low reliability of the distance factor.

**Endorsement.** Female business students were asked about the extent they endorsed these stereotypes. Supporting Hypothesis 2, female business students with lower levels of conflict, and lower levels of distance endorsed these stereotypes related to female businesspersons less than female business students with higher levels of conflict, and higher distance levels of distance. This finding may provide an explanation to the different strategies female businesspersons adopt in the workplace to cope with stereotypes. Fischlmayr (2002) reported that female businesspersons consciously behaved in stereotypic ways while Bendl (2008) and Kyriakidou (2011) noted that female businesspersons and professionals behaved in anti-stereotypic ways. Hence, it is likely female businesspersons with higher levels of conflict and distance would prefer to conform to stereotypic behaviors in the workplace while female businesspersons with lower levels of conflict and distance would prefer to behave anti-stereotypically.

**Awareness of female businesspersons' stereotypes.** It seems likely that female business students with low conflict may have low endorsement of stereotypes as a result of low awareness of the stereotypes. Hence, analyses were conducted to examine if G-II predicted the likelihood of being aware of these stereotypes using logistic regression. In this model, awareness (1 = aware, 2 = unaware) is the dependent variable. The conflict subscale of G-II was included as the independent variable. Strength of identification with professional identity and strength of identification with gender identity were added as covariates. The effect of the levels of conflict between female business students' gender and professional identities on awareness was significant,  $b = 1.70$ ,  $Wald = 5.30$ ,  $p = .02^4$ . The odds ratio obtained from the analysis suggests that participants with lower levels of conflict are 5.48 times more likely to be aware of female businesspersons stereotypes with every unit increase of conflict,  $Exp(B) = 5.48$ . A similar logistic regression was conducted using the distance subscale of G-II. However, results showed that levels of distance between female business students' gender and professional identities did not significantly predict their likelihood of being aware of these female business stereotypes,  $b = -.58$ ,  $Wald = .69$ ,  $p = .41^5$ . The odds ratio obtained from the analysis suggests that participants with lower levels of distance are .56 times more likely to be aware of female businesspersons stereotypes with every unit increase of conflict,  $Exp(B) = .56$ . These finding suggests that female business students with little conflict and distance between their gender and professional identities are not ignorant of how they may be perceived in the workplace. However, they are not vulnerable to these stereotypes even when they were aware of it.

This study does not rule out the possibility that even though there does not seem to be an effect of G-II and awareness of stereotypes about female businesspersons, female business students may in fact hold an implicit stereotype about female businesspersons of

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<sup>4</sup> The analysis, with conflict as the predictor, yielded a model fit of  $\chi^2(3) = 9.75$ ,  $p = .02$ ,  $R^2 = .19$  (Nagelkerke R Square).

<sup>5</sup> The analysis, with distance as the predictor, yielded a model fit of  $\chi^2(3) = 3.51$ ,  $p = .32$ ,  $R^2 = .07$  (Nagelkerke R Square).

which they may not be conscious of given that awareness of stereotypes was an explicit self-report from the students. Coupled with the fact that only a small number of female business students indicated that they were unaware of stereotypes ( $N=14$ ), the effect of level of conflict, and the level of distance, on the level on endorsement of these stereotypes when female businesspersons are unaware is inconclusive for this study.

**Co-existence of competence and warmth in another professional.** In this study, female business students were randomly assigned to either evaluate a female professional or a male professional on competence-related and warmth-related traits. The interaction effect between female business students' level of conflict between their gender and professional identities and the gender of the professional on perceived co-existence of competence and warmth of the professional was not significant. This does not support Hypothesis 3, which predicted that there would be an interaction effect between female business students' level of G-PII and gender of the target professional on perceived co-existence of competence and warmth of the professional. A-priori power analysis revealed that the minimum sample size for observing a small effect of  $f^2 = .096$  with a statistical observed power of 0.80 is 84 participants. Hence, the interaction effect would have a stronger level of significance if more data were collected.

Simple slope analysis revealed that female business student perceived the co-existence of competence and warmth of the male professional similarly, regardless of the level of conflict participants experience between their dual social identities. This supported Hypothesis 3b. Female business students' level of conflict between their dual social identities predicted the co-existence of competence and warmth of another professional only when the gender of the other professional was female. However, the findings were in the opposite direction from what was predicted in Hypothesis 3a. Female business students with lower

conflict had instead perceived lesser co-existence of competence and warmth than students with higher conflict between their dual social identities.

I further examined this finding by splitting participants along the median level of conflict. Paired sample T-tests revealed that both female business students with lower levels of conflict rated the female professional as more warm ( $M = 6.15$ ,  $SD = .60$ ) than competent ( $M = 6.10$ ,  $SD = .57$ ) although this difference was not significant,  $M_{diff} = -.05$ ,  $p = .62$ . This is also found for female business students with higher levels of conflict, although they rated the female professional more similarly on competence ( $M = 6.02$ ,  $SD = .17$ ) and warmth ( $M = 6.03$ ,  $SD = .16$ ),  $M_{diff} = -.02$ ,  $p = .87$ . Independent T-tests also revealed that there is no significant difference between the competence ratings,  $M_{diff} = .08$ ,  $t(44) = .38$ ,  $p = .71$ , and the warmth ratings,  $M_{diff} = .12$ ,  $t(44) = .57$ ,  $p = .57$ , of the female business students with lower levels of conflict and students with higher levels of conflict.

These findings suggest that female business students' perception of the female professional was similarly across the different levels of conflict. Hence, it is likely that the significant effect found for the level on conflict on perceived co-existence of competence and warmth of the female professional is a result of a methodological artifact. Given that the operationalization of co-existence of competence and warmth was the absolute discrepancy between female business students' perceived competence and warmth ratings, the higher discrepancy found amongst female business students with lower levels of conflict could be due to their relatively higher ratings of the female professional. Future studies should seek to rectify this by re-operationalizing co-existence of competence and warmth. Similar to the suggestion for self-perceived co-existence of competence and warmth, one way could be to ask participants directly on their perceptions of competence and warmth of the female professional. For instance, female businesspersons could instead be asked "to what extent do

you see the female professional as both a competent and warm individual” based on 5-point Likert scale (1=not at all, 5=a great extent).

## Chapter 6: STUDY 2

### Methods

**Participants.** A total of 103 female undergraduate students from Singapore Management University took part in the study and were compensated with either a course credit or SGD\$5 upon completion of the study. As two participants did not have business majors, a sample of 101 participants was left. Similar to Study 1, participants who did not identify strongly with their professional and gender identities were left out in the main analysis. This resulted in a final sample of 80 participants (mean age = 21.19 years, SD = 1.40). Participants were mostly in their third and fourth year of study (mean year = 3.04, SD = 1.02), all of whom were either primary business students or students who are pursuing a business major (mean length = 14.35 months, SD = 9.91), and have indicated that they are likely to pursue a business-related career upon graduation (mean likelihood = 6.13 on a 7-point Likert scale, SD = .96). Of these 80 participants, 42 participants have been through an internship program related to their business major (mean length = 5.50 months, SD = 5.66).

**Procedure.** Participants first completed an online questionnaire, which consisted of demographic questions, the G-PII Scale and a list of competence-related and warmth-related traits that participants rated themselves on<sup>6</sup>. The questionnaire also included the 10-item international PANAS short-form scale to examine if participants' baseline mood, and a question that assessed baseline fatigue (i.e., "*How tired are you feeling now*" on a 5-point scale (*1 = very slightly/not at all, 5 = extremely/very much*)). After completing the questionnaire, participants went through a writing task where participants were assigned to either the experimental condition or to the control condition. Following this writing task, participants proceeded to complete the Stroop Task. Finally, participants completed the 10-item international PANAS Short-Form and the question that assessed fatigue again. To check

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<sup>6</sup> The purpose of the inclusion of this list was to confirm the pattern of findings found in Study 1, in which G-PII did not significantly predict co-existence of competence and warmth but seemed to suggest so.

if participants employed identity-related knowledge in the writing task, participants indicated how closely they related the traits of competence and warmth (for participants assigned to the experimental condition), and energetic and perceptive (for those assigned to the control condition) to their professional identity and to their gender identity on a 5-point scale (1 = very slightly/not at all, 5 = extremely/very much). Additionally, participants were required to state how competent they were in their reading English materials, and writing in English, on a scale of 1 (not competent) to 5 (very competent). Lastly, they indicated how often they kept the same female executive in mind when describing her across different traits on a 5-point scale (1=not at all, 5=all the time).

***Experimental condition.*** Participants assigned to the experimental condition worked on a writing task that required them to describe a female executive in relation to traits tied to their social identities. Participants were first required to describe a female executive in traits related to their gender identity. They were given the following instruction, “*Think about a female executive who is working in a business corporation. Describe the attributes (e.g., traits, outfit and appearance, ability, goals, etc.) and behaviors (e.g., conduct, actions, interactions, job performance etc.) of this female executive that would signal to her co-workers that she is a warm and sociable individual*”. Following this, they were then instructed to describe the same female executive in traits related to their professional identity. They were given the following instructions, “*Previously, you have described the behaviors of a female executive that would signal to her co-workers that she is warm and sociable. Now, with the same female executive in mind, describe the attributes (e.g., traits, outfit and appearance, ability, goals, etc.) and behaviors (e.g., conduct, actions, interactions, job performance etc.) that would signal to her co-workers that she is also a competent and assertive individual*”. The order of the traits that were related to the gender identity and the professional identity was counterbalanced. In other words, some participants described the

female executive as a warm and competent individual first, followed by competent and warm. Time taken for participants to describe the behaviors will be measured to assess fixation on the traits.

**Control condition.** A control condition was included to discern between the challenge of integrating elements from two knowledge systems in general from the challenge of integrating elements from two knowledge systems tied to participants' conflicting professional and gender identities. Participants assigned to the control condition described a female executive as an energetic individual and as a perceptive individual<sup>7</sup>. The order of the traits in this condition was counterbalanced as well.

**Materials and measures.** Participants responded to the measures and completed the materials as detailed below.

**G-PII.** The same scale as administered in Study 1 was used in this study.

**Competence and Warmth Traits.** The same traits as administered in Study 1 were used in this study.

**Stroop Task.** The Stroop task (1935) provides a useful method to study the ego-depleting effects of the simultaneous use of two knowledge systems since it is a classic psychological test of attention control and is also widely used as a measure of ego-depletion. In this task, participants are presented with color words (i.e., yellow). There are trials in which the stimuli are congruent (i.e., the color words are printed in ink colors that match the name of the color; e.g. the word 'green' is printed in green ink) and other trials in which the stimuli are incongruent (i.e., the color words are printed in ink colors that are different from the name of the color; e.g. the word 'green' is printed in blue ink). Their task is to name the ink color of each word as quickly as possible. Participants went through a total of 72 trials in

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<sup>7</sup> A pilot test was conducted with 35 female business students to select two traits that were not strongly related to the female identity and to the professional identity. Results revealed that energetic and perceptive were not strongly tied to either identity. Moreover, these traits were positively perceived and are not significantly correlated to each other.



this study<sup>8</sup>. Within these 72 trials, one block of 12 trials serve as test trials while the remaining 60 trials consisted of a three congruent trials to one incongruent trial ratio<sup>9</sup>. The accuracy and latency of the participants' responses in incongruent trials are of primary interest in this study. A lower score in accuracy and a higher response time in giving a correct response are indications of ego-depletion.

**PANAS.** The 10-item international Positive and Negative Affect Schedule (PANAS) Short Form is a measure of state mood. It contains five positive affect terms (i.e. enthusiastic, excited, proud, etc.) and five negative affect terms (i.e. distressed, upset, irritable, etc.). Participants will have to rate their current mood for each term on a 5-point scale (1 = not at all, 5 = extremely).

## Results

**Demographics of participants across assigned conditions.** Participants were randomly assigned to the two conditions: 38 participants were assigned to the experimental condition in which participants had to describe a female professional as a competent and warm individual and 42 participants were assigned to the control condition in which participants had to describe a female professional as a energetic and perceptive individual. T-tests showed that participants assigned to the experimental condition were younger ( $M_{diff} = -.61, t(78) = -1.98, p = .05$ ), have pursued a business major for a shorter time ( $M_{diff} = -8.39, t(78) = -3.44, p = .001$ ), are less likely to pursue a business-related career ( $M_{diff} = -.44, t(78) = -2.08, p = .04$ ), and identified with their gender identity more ( $M_{diff} = .32, t(78) = 2.28, p = .025$ ) than participants in the control condition. Participants did not differ in their year of study, the length of their internship program for those who have underwent it, and strength of identification with their professional identity ( $ps > .10$ ) (See Table 8).

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<sup>8</sup> While Gailliot et al., (2007) used 75 trials in their study, Job, Dweck and Walton (2010) only used 48 trials in their study, both studies showed significant differences between participants who were ego-depleted and those who were not. Hence, 60 actual trials should sufficiently allow participants to comprehend the task.

<sup>9</sup> This was done to increase the sensitivity of the task, as it requires more attention from participants in incongruent trials (Kane & Engle, 2003).

Table 8

Summary of variables across Conditions (N=80).

Variables	Experimental Condition		Control Condition	
	Mean	SD	Mean	SD
Age	20.87 <sup>b</sup>	.91	21.48 <sup>b</sup>	1.69
Year	2.97	.94	3.10	1.10
Length in business major	10.07 <sup>a</sup>	8.04	18.46 <sup>a</sup>	9.92
Length of internship	3.98	2.46	6.59	6.98
Professional Identity	3.58	.68	3.76	.66
Gender Identity	4.37 <sup>a</sup>	.63	4.05 <sup>a</sup>	.62
Business Career	5.89 <sup>a</sup>	1.03	6.33 <sup>a</sup>	.85
Change in fatigue	.13	.62	.21	.98
Change in Negative Affect	-.01	.36	.05	.50
English Competence (Writing)	4.18 <sup>a</sup>	.98	3.67 <sup>a</sup>	1.07
English Competence (Reading)	4.39 <sup>b</sup>	.89	4.02 <sup>b</sup>	.98
Time taken in writing task	250.96	122.20	228.82	112.25
Kept same female in mind	3.79	.94	4.07	.56

Note. <sup>a</sup> refers differences in means  $p < .05$ , <sup>b</sup> refers differences in means  $p < .10$ .

**Manipulation check.** Given that the experimental condition required participants to integrate two contradictory traits related to their identities (i.e., competence and warmth), it can be expected that participants might experience more fatigue and negative affect in this condition than in the control condition in which they had to integrate two contradictory traits that were not related to their identities (i.e., energetic and perceptive). T-tests revealed that participants did not differ significantly in their change in fatigue levels ( $M_{diff} = .083$ ,  $t(78) = -.45$ ,  $p = .66$ ) nor level of negative affect ( $M_{diff} = -.053$ ,  $t(78) = -.54$ ,  $p = .59$ ) across conditions. This could potentially be attributed to participants' level of competence in writing in English. Participants assigned to the control condition felt less competent in writing in English ( $M = 3.67$  out of 5 on a Likert scale,  $SD = 1.07$ ) compared with participants in the

experimental condition ( $M = 4.18$ ,  $SD = .98$ ),  $M_{diff} = .52$ ,  $t(78) = 2.24$ ,  $p = .028$ . Participants also marginally differed in their self-reported competence in reading materials in English ( $M_{diff} = .37$ ,  $t(78) = 1.77$ ,  $p = .08$ ). The lower competence in writing in English may have caused additional stress and effort to the participants in the control condition, masking the fatigue and negative affect experienced from the integration of two contradictory traits in the experimental condition. Participants assigned to the experimental condition were not any less likely to keep the same female professional in mind when describing her in different traits compared with participants assigned to the control condition ( $M_{diff} = -.28$ ,  $t(78) = -1.66$ ,  $p = .10$ ). This suggests that it is equally difficult to describe the same female professional in two contradictory traits related to their professional and gender identity and in two contradictory traits that are unrelated to these social identities.

**Traits related to social identities.** Paired sample T-tests indicated that participants related warmth significantly closer to their gender identity ( $M = 4.05$ ,  $SD = .77$ ) than their professional identity ( $M = 3.39$ ,  $SD = .82$ ),  $M_{diff} = .66$ ,  $t(37) = 5.44$ ,  $p < .001$ . Conversely, participants related competence significantly closer to their professional identity ( $M = 4.34$ ,  $SD = .58$ ) than to their gender identity ( $M = 3.79$ ,  $SD = .88$ ),  $M_{diff} = -.55$ ,  $t(37) = -3.96$ ,  $p < .001$ . There is no difference in how close participants related the trait energetic to their gender identity ( $M = 3.24$ ,  $SD = 1.03$ ) or professional identity ( $M = 3.48$ ,  $SD = .80$ ),  $M_{diff} = -.24$ ,  $t(41) = -1.53$ ,  $p = .13$ . There is also no difference in how close participants related the trait perceptive to their professional identity ( $M = 3.69$ ,  $SD = .75$ ) or gender identity ( $M = 3.55$ ,  $SD = .71$ ),  $M_{diff} = -.14$ ,  $t(41) = -1.18$ ,  $p = .24$ . These findings indicate that competence and warmth are uniquely tied to their professional and gender identities, but not energetic and perceptive.

**Fixation of traits in writing task.** Paired sample T-test showed that participants spent significantly more time describing the female executive in relation to the first trait that

was presented ( $M = 264.98$ ,  $SD = 149.06$ ) than the second trait that was presented ( $M = 213.69$ ,  $SD = 103.91$ ),  $M_{diff} = 51.29$ ,  $t(79) = 4.30$ ,  $p < .001$ . This was the case for across both the experimental and control conditions. Given that the presentations of traits were counter-balanced for both conditions, this indicates that there is no one single trait participants focused on.

**Co-existence of competence and warmth.** Similar to Study 1, regression analysis was employed. Perceived co-existence of competence and warmth is operationalized as the absolute discrepancy between participants' ratings of their perceived competence and warmth of themselves. This served as the dependent variable in this analysis. The analysis yielded no main effects for level of conflict on self-perceived co-existence of competence and warmth,  $\beta = .05$ ,  $t(76) = .42$ ,  $p = .67$ . This suggests that level of conflict does not influence a female professional's perception of herself as a competent and warm individual. A similar regression was conducted with the distance subscale as the independent variable. Results showed that level of distance did not predict self-perceived co-existence of competence and warmth,  $\beta = .07$ ,  $t(76) = .62$ ,  $p = .54$ . Similar to Study 1, the findings in Study 2 also showed that level of conflict and level of distance did not predict self-perceived co-existence of competence and warmth.

**Accuracy and Reaction Time (RT) in Stroop Task.** Hypothesis 4 predicts that there will be an interaction effect between participants G-P11 and processing identity-related information regarding a female professional on ego-depletion. Specifically, I predict that participants with higher G-P11 would be less ego-depleted than participants with lower G-P11 when asked to describe a female professional as a competent and warm individual. However, when asked to describe a female professional as an energetic and perceptive individual (traits unrelated to their social identities), I predict that participants with higher G-P11 will not be any less ego-depleted than participants with lower G-P11.

To examine this hypothesis, regression analysis was employed. In this model, levels of conflict between female business students' gender and professional identities, and the condition in which the participant was assigned to, were included as independent variables. Strength of identification with their professional identity and strength of identification with their gender identity were added as covariates. Accuracy of responses on incongruent trials and the reaction time (RT) of participants in which they gave correct responses on incongruent trials served as the main dependent variables in this regression model. This is because incongruent trials required more attentional control, hence ego-depletion is more likely to be observed. The dependent variables were analyzed independently.

The analysis yielded a marginal significant main effect of condition on accuracy ( $\beta = .20, t(74) = 1.73, p = .09$ ), indicating that female business students assigned to the control condition had more accurate responses in general compared with those assigned to the experimental condition. Female business students' level of conflict between their dual social identities did not predict accuracy ( $\beta = .39, t(74) = 1.01, p = .32$ ), suggesting that female business students performed similarly across different levels of conflict. There was no significant interaction effect between female business students' level of conflict and condition on accuracy ( $\beta = -.45, t(74) = -1.18, p = .24$ ) (see Table 9). Female business students' level of conflict did not predict accuracy scores in both experimental and control conditions.

A similar regression analysis was conducted using the distance subscale of G-II as the independent variable. There was no significant main effect of condition on accuracy scores ( $\beta = .19, t(74) = 1.57, p = .12$ ), neither was there a significant main effect of female business students' level of distance between their dual social identities on accuracy scores ( $\beta = -.45, t(74) = -1.25, p = .22$ ). There was also no significant interaction effect between

female business students' level of distance and condition on accuracy ( $\beta = .37, t(74) = 1.05, p = .30$ ).

Table 9

*Summary of Regression Analysis predicting Accuracy on Incongruent Trials (N=80).*

Variable	<b>B</b>	<b>SE B</b>	<b><math>\beta</math></b>
Professional Identity	-.03	.02	-.21
Gender Identity	.02	.02	.09
G-PII (Conflict)	.06	.06	.39
Condition	.04	.02	.20
G-PII (Conflict) X Cond	-.04	.04	-.45
$R^2$			.09
$F$			1.38
$\omega^2$			.02

*Note:* all  $ps > .10$ .

Regression analysis with RT as the dependent variable also yielded no significant main effect for level of conflict on RT identities ( $\beta = -.52, t(74) = -1.35, p = .18$ ). This indicates that female business students had similar reaction times across the different levels of conflict between their dual social identities. The main effect of condition on RT was insignificant ( $\beta = -.04, t(74) = -.35, p = .73$ ). This implies that female business students had similar reaction times across both conditions. There was also no significant interaction effect between conflict and condition on RT ( $\beta = .27, t(74) = .70, p = .49$ ), suggesting that female business students' level of conflict did not predict RT differently across the experimental and control conditions. Post-hoc power analysis revealed that the statistical power was 0.70 for detecting the effect size of  $f^2 = .08$  of this regression model (see Table 10).

However, analyses of simple slopes suggests that the main effect of conflict on RT is apparent in the experimental condition ( $b = -127.81, t(74) = -2.00, p = .049, CI [-254.87, -.76]$ ) but not in the control condition ( $b = -70.77, t(74) = -1.36, p = .18, CI [-174.49, 32.94]$ ).

Female business students with different levels of conflict between their dual social identities differed in their RT in the experimental condition. Specifically, female business students with lower levels of conflict were faster in their RT than female business students with higher levels of conflict. Contrastingly, female business students' RT was similar across different levels of conflict between their dual social identities in the control condition.

Table 10

*Summary of Regression Analysis predicting RT of Correct responses on incongruent trials (N=80).*

Variable	<i>B</i>	<i>SE B</i>	<i>β</i>
Professional Identity	6.29	38.72	.02
Gender Identity	21.60	41.71	.06
G-PII (Conflict)	-184.85	137.18	-.52
Condition	-18.68	53.11	-.04
G-PII (Conflict) X Cond	57.04	81.84	.27
<i>R</i> <sup>2</sup>			.08
<i>F</i>			1.20
<i>ω</i> <sup>2</sup>			.01

*Note: all ps > .10.*

A similar regression analysis was conducted using the distance subscale of G-PII as the independent variable. There was no significant main effect of condition and on RT ( $b = -21.70$ ,  $t(74) = -.39$ ,  $p = .70$ ), neither was there a significant main effect of female business students' level of distance between their dual social identities on RT ( $b = 22.04$ ,  $t(74) = .12$ ,  $p = .90$ ). There was also no significant interaction effect between female business students' level of distance and condition on RT ( $b = -20.82$ ,  $t(74) = -.18$ ,  $p = .85$ ). Simple slopes analyses revealed that level of distance did not predict RT in both experimental condition,  $b = 1.22$ ,  $t(74) = .02$ ,  $p = .99$ , and control condition,  $b = -19.59$ ,  $t(74) = -.24$ ,  $p = .81$ .

In sum, female business students with different levels of conflict, and with different levels of distance, did not differ in their accuracy scores in incongruent trials of the Stroop task. They, however, differed in RT in incongruent trials. This is evident only in the experimental condition, but not in the control condition. Female business students with lower levels of conflict reacted faster to incongruent trials than female business students with higher levels of conflict in the experimental condition. This suggests that female business students with higher levels of conflict were more ego-depleted compared to students with lower levels of conflict. Female business students with lower levels of conflict had similar RT with students with higher levels of conflict in the control condition, implying that female business with higher levels of conflict were not more ego-depleted than female business students with lower levels of conflict in the control condition. These set of findings were not found when the distance subscale of G-II was used as an independent variable to predict RT.

## **Discussion**

In this study, female business students were randomly assigned either to the experimental condition, where they had to describe a female executive in terms of competence and warmth, or to the control condition, where they had to describe a female executive on the traits of energetic and perceptive. Female business students then completed the Stroop task. Controlling for female business students' strength of identification with their gender and professional identities, the conflict subscale of G-II did not significantly predict accuracy, but it significantly predicted RT. Furthermore, the effect of female business students' level of conflict on RT was evident in the experimental condition, but not in the control condition. This set of findings suggests that female business students were motivated to be accurate in their responses regardless of the level of conflict between their dual social identities.



However, female business students with lower levels of conflict were faster in giving a correct response in an incongruent trial than students with higher levels of conflict, implying that female business students with higher levels of conflict between their dual social identities were more ego-depleted compared with students with lower levels of conflict between their dual social identities. This occurred only in the experimental condition, where students were required to describe a female executive as competent and warm, traits tied to their gender and professional identities. Hence, the findings in Study 2 lends support to Hypothesis 4, which predicted that female business students with lower levels of G-P-II would be more ego-depleted than students with higher levels of G-P-II when asked to process information regarding their conflicting social identities simultaneously. Future research can seek to improve the effect found in Study 2 by improving on the manipulation between the experimental and control conditions.

Results of the manipulation check showed that participants assigned to the control condition were not less tired than participants assigned to the experimental condition. This could be due to the taxing nature of the writing task, such that participants were cognitively drained from writing on top of integrating the two traits presented to them. Future studies could use a simpler task such as providing a list of behaviors of a female executive. Compared to a writing task, this would be relatively less taxing as participants would only be required to provide brief descriptions of the behaviors.

The lack of a significant interaction effect between female business students' level of conflict and condition they were assigned to on RT could be due to the small sample size of this study. A priori power analysis using G-power computer program revealed that the minimum sample size to detect of effect of  $f^2 = .08$ , with a statistical power of 0.80, is 101 participants. The current study only involved 80 female business students.

The lack of significant findings when the distance subscale was employed as the independent variable could be due to the low reliability of the distance factor in the two-factor G-PII model. Following my speculation in the discussion of Study 1, there would be higher reliability of the distance scale if a sample of female working professionals were used. Hence, future studies should be conducted with a sample of working professionals to examine if there is an effect female businesspersons' level of distance on their cognitive resources. If the distance scale were to have satisfactory reliability with a sample of working professionals, but the lack of an effect of the level of distance on cognitive resources persists, it would imply that level of conflict, but not distance, influences cognitive resources.

## **Chapter 7: GENERAL DISCUSSION**

### **Theoretical Implications**

Study 1 investigated the effect of female businesspersons' level of conflict and level of distance between their gender and professional identities on their perceived co-existence of competence and warmth of themselves, and on their perceptions of another professional. Study 1 also examined the effect of female businesspersons' level of conflict, and their level of distance, between their dual social identities on their level of endorsement of female businesspersons stereotypes. The results of this study indicated that female business students' level of conflict and distance between their dual social identities does not influence their self-perceived co-existence of competence and warmth. Female business students with lower levels of conflict and distance, and students with higher levels of conflict and distance, perceived themselves to be competent and warmth simultaneously. When it comes to perceiving another professional, female business students' level of conflict and distance between their dual social identities did impact how they perceived another professional in terms of competent and warmth simultaneously, but only when they evaluated a female professional. Finally, my findings showed that female business students' with lower levels of conflict and distance endorsed the stereotypes less. Although only some hypotheses of this paper were supported, the results offer preliminary evidence that may bridge a number of empirical gaps in the research area of gender, perceptions and stereotypes within the workplace.

Firstly, the results above offer an explanation for the conflicting findings in the literature about female businesspersons' endorsement of stereotypes. Qualitative reports suggest that female employees, especially for those in male-dominated environments, are aware of these stereotypes and consciously behaved in stereotypical ways in their workplace, suggesting that female businesspersons generally endorsed these stereotypes (Fischlmayr.

2002). Yet, there are other female businesspersons, and professionals, who actively attempt to display anti-stereotypic behaviors (Kyriakidou, 2011; Bendl, 2008). Results from this study suggest that it is important to consider female businesspersons' integration of their gender and professional identities as this could explain why some female businesspersons choose to conform to the stereotypes while some do not.

Secondly, the findings above also shed light on how female businesspersons may perceive other female professionals differently. Research on role incongruity demonstrates how competent male professionals and female professionals are perceived and liked differently (Heilman et al., 2004; Rudman & Phelan, 2008) by both males and females. Competent male professionals can also be perceived as a warm individual, and they are more likable. However, competent female professionals are usually rated to be less likable, and that they are not perceived as warm at the same time. These studies assume that the perceptions of females are similar to one another. The findings in this study complements these set of findings as it suggests that it is crucial to take into account the role of female businessperson's identity integration when examining their perceptions of other female professionals. This is especially so since female businesspersons differ in their perceptions and likings of another female businessperson, but not other male businesspersons. (when female professionals' self-perceptions and perceptions to other female professionals are both varied, how would this influence their social and work outcomes in work-settings?)

Thirdly, a confirmatory factor analysis and reliability analysis resulted in an 18-item G-P11 scale, and that the G-P11 construct was found to have a two-factor structure consisting of conflict and distance components. Given that past research has employed different items to measure G-P11 (e.g., Cheng et al., 2008; Mok & Morries, 2012; Wallen et al, 2013), the validation of the G-P11 measure in this paper sets the groundwork for future G-P11 research, allowing more meaningful interpretation of results in relation to the components of G-P11.

However, due to the lack of significant findings for the self-perceived co-existence of competence and warmth, and the lack of significant findings for interaction effects for perceived co-existence of competence and warmth of another professional, it is imperative to re-examine the relationship of female businesspersons' level of G-II on these variables so as to gather greater support for the findings in this paper. Specifically for self-perceptions, it is likely that the lack of significant findings was due to the operationalization of the dependent variables. As such, future research should attempt to ask for female businesspersons' self-perceived co-existence of competence and warmth in a more direct and context-specific manner.

Study 2 examined the effect of female businesspersons' level of G-II on their cognitive resources, especially when they are asked to process information regarding their conflicting social identities. Results in this study suggest that female businesspersons with higher conflict find it more challenging to integrate identity-related concepts when asked to do so. As a result, they would be more cognitively depleted than others. The findings in this study can offer an explanation in understanding the different behaviors of female businesspersons in the workplace. Female businesspersons who are ego-depleted from their conflicting social identities may find a reduction in their ability to regulate their emotions or to work efficiently and an increase in engaging in stereotypic behaviors.

### **Practical Implications**

The potential findings of this paper hold important implications for understanding the ways female businesspersons cope with the stereotypes they face in the workplace. Firstly, since it was found that participants with higher conflict between their identities had higher endorsement of stereotypes, the findings of this paper demonstrated that female businesspersons with higher levels of G-II are less likely to conform to stereotypes, whereas female businesspersons with lower levels of G-II are more likely to be susceptible to

stereotypes. Hence, it might be possible to predict the type of strategy female businesspersons choose to employ to navigate in the workplace depending on their level of G-II. Female businesspersons with lower levels of G-II would choose to conform to the stereotypes and behave in stereotypical ways. However, female businesspersons with higher levels of G-II would refuse to conform to the stereotypes and behave in ways that may highlight their uniqueness as a women and a professional to their co-workers. Consequently, this will be helpful in identifying who are likely to be successful in their careers and who would be likely to be less satisfied with their jobs.

Secondly, given that this findings of this paper suggest that female business students with higher levels of conflict were more ego-depleted than students with lower levels of conflict between their dual social identities when asked to integrate information related to their conflicting social identities, it is likely to identify the female businesspersons who may perceive a large amount of stress in the workplace. Balancing between their gender and professional identities may be a subconscious activity that female businesspersons take part in everyday in the workplace. However, the effect of such an activity may be ego-depleting for female businesspersons with lower levels of G-II. Being ego-depleted would imply that these female professionals would have lesser self-regulatory resources for them use. In other words, their work performance would be affected. However, these indirect consequences of female businesspersons with differing levels of G-II will have to be empirically tested.

### **Future directions**

Based on the insights gathered from the theoretical and practical implications of this study, I propose some suggestions for future research. Firstly, there is an impetus to collect more data responses in order validate the G-II scale. The low reliability found for the distance subscale suggests that there is a need to allow participants to interpret the distance

items in a meaningful way. The establishment of a G-PII scale with satisfactory reliability for both the conflict subscale and the distance subscale could help to further research in G-PII.

Secondly, the lack of significant findings for female businesspersons' level of G-PII on self-perceived co-existence of competence and warmth could be due to the lack of a specific context in which their self-perceptions were based upon, as mentioned in the discussion sections earlier. Future research can seek to address this limitation by asking female businesspersons' more directly on their perceived co-existence of competence and warmth in specific contexts where their conflicting identities are salient. Future studies can also examine how female businesspersons' perceptions of themselves will influence their behaviors and career outcome, such as promotional opportunities (Jackson, 2001) and job satisfaction (Tapia & Kvasny, 2004).

Thirdly, even though this study has found effects of female business students' level of conflict and level of distance between their gender and professional identities on the level of endorsement of female businesspersons stereotypes, this study cannot rule out the possibility that they may hold implicit stereotypes of female businesspersons. Future studies can seek to address this by introducing implicit measurements of attitudes towards female businesspersons, coupled with observed behaviors, on top of their self-reported level of endorsement.

Lastly, the findings of Study 2 suggests that female businesspersons with lower levels of G-PII will be ego-depleted when they attempt to draw concepts related to their conflicting social identities and integrate these concepts together. However, it is possible that female businesspersons draw knowledge from a fused third-identity knowledge system that contains the integrated and fused knowledge from both their identities instead of from two independent identity-related knowledge systems. While Cheng et al.'s (2008) study suggests that the superior creative performance of high identity integrators can be attributed to their

simultaneous application of elements form two independent knowledge systems that is each associated with their professional (engineer) and female identity, LaFromboise, Coleman, and Gerton (1993) proposed that the identities of biculturals can be considered as “fused”, proposing a third culture that is created by recombining both cultures, hence suggesting that it is possible that female businesspersons posses a third integrated knowledge system, associated with this third culture, in which they employ in situations that require the application of both knowledge systems. Hence, future studies can seek to examine if the socio-cognitive mechanism at play is the simultaneous access to two independent knowledge systems, or the access to a third knowledge system.

While this study examines female businesspersons’ self-perceptions and perceptions of others in terms of stereotyped traits, there is another aspect of stereotype research that is not covered in this study, and that is stereotype threat. Specifically, future research can examine if stereotype threat is experienced differently across female businesspersons with differing levels of G-P.II. Stereotype threat can occur when one’s negative social identity is made salient, especially when the social identity is related to the task. Schmader (2002) proposed that females who identify stronger with their gender identity would be more motivated to maintain a positive image of their identity and thus should experience greater stereotype threat. Moreover, self-protection motives were found to account for the contrast effect found amongst biculturals with lower levels of identity integration (Mok & Morris, 2013). This provides preliminary support to that female businesspersons with lower levels of G-P.II may experience more stereotype threat when their gender identity is made salient than female businesspersons with higher levels of G-P.II. This line of research would extend research on stereotype threat of female businesspersons also complement Schmader’s (2002) research.



## **Chapter 8. CONCLUSION**

The perceptions female businesspersons hold for themselves, and their subsequent behaviors, have significant impact on their career outcome, as such it is important to examine how female businesspersons differ in their self-perceptions. Drawing on social identity theory, this paper proposes that female businesspersons' level of G-P-II would influence their perceived co-existence of competence and warmth of themselves and of other professionals, and the extent to which female businesspersons endorse stereotypes related to them. Based on the findings in this paper, female businesspersons do not differ in how they perceive co-existence of competence and warmth of themselves. They do however, differ in their level of endorsement of female businesspersons stereotypes, and how they perceive other female professionals. This paper also examined the effect of female businesspersons' level of G-P-II on cognitive resources as this may shed some light as to why some female businesspersons conform to gender-related stereotypes while others do not. The finding of this paper suggests that female businesspersons with lower levels of G-P-II are more ego-depleted than their counterparts with higher levels of G-P-II when they are asked to integrate concepts related to their conflicting social identities. The findings of this paper hold important theoretical implications for G-P-II research, and practical implications for facilitating female businesspersons to better understand, and consequently cope, with the experiences they have in their workplace.

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## APPENDIX

### Appendix 1

#### G-PII Scale (adapted from BIIS-1 and BIIS-2, Benet-Martinez, 2003; Huynh, 2009)

1 (Completely disagree) -> 5 (Completely agree)

1. I feel that there are more similarities than differences between my gender and business identities.
2. Both my gender and business identities make me who I am.
3. I cannot ignore the gender or business side of me.
4. I feel like a female and a businessperson at the same time.
5. I relate better to a combined gender-business identity than to a gender or a business identity alone.
6. I feel “female-businessperson” (hyphenated, a mixture of the two).
7. I feel part of a combined gender-business identity.
8. I find it difficult to combine my gender and business identities.
9. I do not blend my gender and business identities.
10. Being a female businessperson is like being divided into two parts.
11. I have a foot in each identity, both gender and business identities.
12. I am simply a female in a business workplace.
13. I keep my gender and business identities separate.
14. I find it easy to harmonize my gender and business identities.
15. I do not find being a female businessperson difficult.
16. I find it easy to have both gender and business identities.
17. I rarely feel conflicted about being a female businessperson.
18. I find it easy to balance both my gender and business identities.
19. I feel that my gender and business identities are complementary.
20. I do not feel trapped between my gender and business identities.
21. I feel torn between my gender and business identities.
22. When I am in a situation that makes my gender identity salient, I cannot relate to my business identity at the same time.
23. It takes a lot of effort to be a female and a businessperson at the same time.
24. Being a female businessperson means having two forces pulling on me at the same time.
25. I feel that my gender and business identities are incompatible.
26. When I am in a business-related situation, I cannot relate to my gender identity at the same time.
27. It is a challenge to be a female and businessperson at the same time.
28. I feel pulled by the gender and business cultural forces in my life.
29. I find it difficult to hold both my gender and professional identities.
30. I am conflicted between the female and business ways of doing things.
31. I feel like someone moving between my gender and business identities.
32. I feel caught between my gender and business identities.

## Appendix 2

**Competence and Warmth Traits (adapted from Fiske et al., 2002; Judd et al., 2005;**

**Abele & Wojciszke, 2007)**

1 (Not applicable) -> 7 (Always applicable)

<i>Competence</i>	<i>Warmth</i>
Competent	Sociable
Intelligent	Warm
Dynamic	Friendly
Organized	Caring
Motivated	Helpful
Energetic	Understanding
Efficient	Reliable
Assertive	Empathetic
Self-Confident	Likable

### Appendix 3

#### Reading Passage (adapted from McGinn & Tempest, 2010)

Rachel (Robert) Tan↓a venture capitalist at Softbank Venture Capital (Softbank) and a former entrepreneur↓ usually receives 40 e-mails overnight, and another 100 or so over the course of the day. Among her e-mails, Rachel (Robert) received an average of 10 business plans per day↓almost all referrals from people she (he) knew in the high-tech industry.

Rachel (Robert) had spent the first decade of her (his) career actively building her (his) network in order to help the software company she (he) co-founded, T/Maker, compete against better-capitalized software developers. Through her (his) roles as CEO of T/Maker, president of the Software Publishers Association, and later, vice president of worldwide developer relations at Apple Computer, Rachel (Robert) had developed a network that included many of the most powerful business leaders in the technology sector.

Rachel's (Robert's) unpretentious personality also meant that she (he) was comfortable interacting with people in a variety of situations, and mixing personal and professional relationships. Over the years, Rachel (Robert) had also mastered the skill of blending professional networking with social networking; she (he) was well-known throughout Silicon Valley for hosting dinner parties at her (his) house that included the likes of Bill Gates of Microsoft and Scott McNealy of Sun Microsystems.

Rachel (Robert) has also been said to be a sincere, down-to-earth person who's easy to be around. An outgoing, high-energy person by nature, Rachel (Robert) had a genuine passion for meeting smart, interesting people and helping them connect with other people she (he) knew. In some cases, Rachel (Robert) even took it a step further and actively helped people in her (his) network find new career opportunities, but she (he) was careful to leverage her (his) contacts only when she could see a true win-win for both parties.

After a stint as a "mentor capitalist," Rachel (Robert) was invited in 1999 to join Softbank as one of five investing partners for its newly raised \$636 million fund focused on Internet companies. While Rachel (Robert) started working for Softbank 30% of her (his) time, she (he) had moved to 50% by the end of her (his) second month, and 80% by the end of her (his) fourth month↓the point at which she (he) declared a "hard-stop." At 80%, Rachel (Robert) realized she (he) was no longer "dabbling"; rather she (he) had fully committed herself (himself) to the life and role of a high-profile venture capitalist.

## Appendix 4

### Summary of CFA of G-P-II Scale across different samples

Component	Item	Study 1	Study 2	Combined
		(N= 82) 28-item	(N= 80) 18-item	(N=162) 18-item
Distance	2. Both my gender and business identities make me who I am.	√		√
	3. I cannot ignore the gender or business side of me.			
	4. I feel like a female and a businessperson at the same time.	√	√	√
	5. I relate better to a combined gender-business identity than to a gender or a business identity alone.	√		
	6. I feel “female-businessperson” (hyphenated, a mixture of the two).	√	√	√
	7. I feel part of a combined gender-business identity.	√	√	√
	9. I do not blend my gender and business identities. [R]	√	√	√
	11. I have a foot in each identity, both gender and business identities. [R]			
	12. I am simply a female in a business workplace. [R]			
	13. I keep my gender and business identities separate. [R]		√	√
Conflict	1. I feel that there are more similarities than differences between my gender and business identities.	√		
	8. I find it difficult to combine my gender and business identities. [R]	√	√	√
	10. Being a female businessperson is like being divided into two parts. [R]	√	√	√
	14. I find it easy to harmonize my gender and business identities.	√		
	15. I do not find being a female businessperson difficult.	√		√
	16. I find it easy to have both gender and business identities.	√		
	17. I rarely feel conflicted about being a female businessperson.	√		
	18. I find it easy to balance both my gender and business identities.	√		

	19. I feel that my gender and business identities are complementary.	√		
	20. I do not feel trapped between my gender and business identities.	√		√
	21. I feel torn between my gender and business identities. [R]	√	√	√
	22. When I am in a situation that makes my gender identity salient, I cannot relate to my business identity at the same time. [R]	√	√	√
	23. It takes a lot of effort to be a female and a businessperson at the same time. [R]	√	√	√
	24. Being a female businessperson means having two forces pulling on me at the same time. [R]	√	√	
	25. I feel that my gender and business identities are incompatible. [R]	√	√	
	26. When I am in a business-related situation, I cannot relate to my gender identity at the same time. [R]	√	√	
	27. It is a challenge to be a female and businessperson at the same time. [R]	√	√	√
	28. I feel pulled by the gender and business cultural forces in my life. [R]	√		
	29. I find it difficult to hold both my gender and professional identities. [R]	√	√	√
	30. I am conflicted between the female and business ways of doing things. [R]	√	√	√
	31. I feel like someone moving between my gender and business identities. [R]	√	√	√
	32. I feel caught between my gender and business identities. [R]	√	√	√
Factor Structure and Reliability	Model Fit	$\chi^2$ (343) = 452.41 $p < .001$	$\chi^2$ (132) = 171.46 $p = .012$	$\chi^2$ (134) = 179.60 $p = .005$
	Fit Indices	CFI = .88 RMSEA = .063	CFI = .93 RMSEA = .064	CFI = .95 RMSEA = .046
	Cronbach Alpha (Distance)	$\alpha = .67$	$\alpha = .65$	$\alpha = .68$
	Cronbach Alpha (Conflict)	$\alpha = .93$	$\alpha = .93$	$\alpha = .90$