

Locus of Control: Conceptualization, Application and Predictive Ability - A Literature Review

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Abstract:

Julian Rotter conceptualized the concept of Locus of Control as well as its scale based on previous research in areas of behavioural control, reinforcements and its impact on outcomes. The perception of reward or reinforcement or gratification is a result of an individual's behaviour or attribute. It can also be contingent upon external factors or non-behaviour factors (Rotter, 1966).

Locus of control (LOC) as a personality trait measure is applied widely to study various aspects like an achievement, performance, academic excellence, job satisfaction, job search, learning and development etc. There are limited studies with women as a subject of research, especially in the case of career women and their LOC. Most of these studies have conflicting, confusing findings, and some are inconclusive too.

The purpose of this paper is to construct an objective summary of the research evidence (Wallston & Wallston, 1978) available on the concept of locus of control and its application at the workplace concerning women, their career management and growth. The reason for developing such body of knowledge is to utilize the academic research in enabling women to scale the career heights up to the corporate board levels especially in India. In the context of the growing Indian economy and opportunities available to women, understanding the drivers to growth will be useful. The current literature on the subject is dominated with the western world point of view.

Key Words : Locus of Control, Women, Career, Achievement, Personality Traits.

Introduction:

In VUCA (Volatile, Uncertain, Complex and Ambiguous) (Bennett, N., & Lemoine, 2014) world today, the lines between truth and lie, real and illusion, global and local are blurring. One needs to be stable, patient and self-driven to survive, succeed and grow. In such a scenario, relying on one's self-belief and

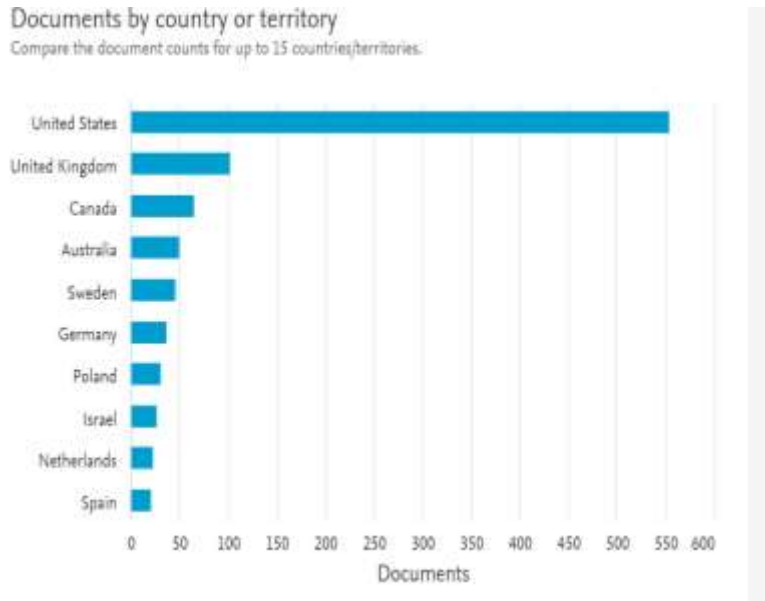
being guided by the inner self (Jones & Crandall, 1986), makes a huge difference. Although the differences between two organisations can be their product, infrastructure, finance etc. nothing can be as critical a differentiator as human capital (Duffy, 2018). At an organizational level, a war for such talent (Ulrich, 2015) is a survival game. Human capital(Duffy, 2018) involves the skills, knowledge and attitudes, reflected in their behaviours and personality.

Behaviours includes postures, body language, mannerism (Chartrand & Bargh, 1999) of an individual and actions of the systems, organisms or entities. Behaviours forms basis of personality, which is a unique combination of characteristics and qualities (Higgins, 2000). For decades, Psychological researchers have been fascinated by multiple facets of personality traits(Dutta et al., 2017; Lichtenthaler & Fischbach, 2017) and behaviours.

Traits in case of personality and attitude in case of behaviours provide the dispositional explanations (Ajzen, 2005, page 1) with the possibility of modification through experience (Bar-Tal, D., Bar-Zohar, 1977; Findley & Cooper, 1983). Traits and attitudes are intrinsic characteristics inferred from external observable cues(Ajzen, 2005). “A personality trait is defined as a characteristic of an individual that exerts a pervasive influence on a broad range of trait-relevant responses”(Ajzen, 2005, page 2). Traits are identified either by the individual himself/herself, family or peers/friends.

The importance of personality traits has increased substantially in economic researches (Preuss, 2018). Locus of control is used intensively to identify motivation and expectations - the two motives which are not recognised by most common personality taxonomy the “Big Five-factor model” which includes – Neuroticism, Extraversion, Openness to experience, agreeableness, and Conscientiousness (Hattrup et al., 2005; Kesavayuth, Dusanee, Kaung Myat Ko, 2018; N Taylor and G P de Bruin, 2013; Preuss, 2018; Schnitzlein & Stephani, 2016).. .

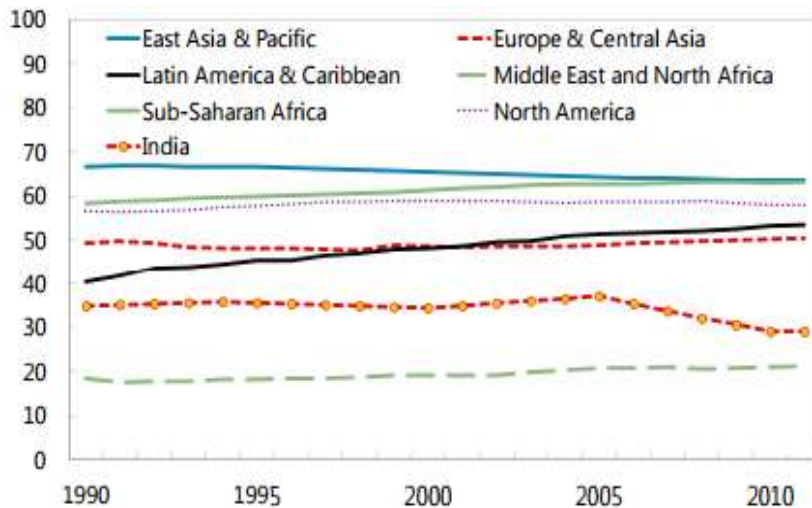
Locus of Control (LOC) as a personality trait measure is used to study personality and characteristics like an achievement, performance, academic excellence, job satisfaction, job search etc. Women related studies are limited, especially in the case of career women and their LOC. The graph below shows the number of research country-wise on LOC and women. Highest number of articles are from USA and less than 20 from India.



Source: Scopus database. Accessed on 14th Feb 2020.

With 33% of female labour participation in India which means that only 125 million of the approximately 380 million working-age Indian females are eligible for employment or already employed. (Das Sonali, Jain-Chandra, Kochhar Sonali, Kumar Kalpana, 2015; Verick, 2011). As per the figure below, the female labor participation is falling, which is a cause of concern as well as has an adverse impact of creating a pipeline of women leaders.

Figure 1: Female Labor Participation Rate(In per cent of female population ages 15+)



Source: World Bank, World Development Indicators, 2013; Key Indicators of the Labour Market (KILM), ILO.

Supplemented by enhanced health benefits, economic liberty and moderate reform policies; women across the world gradually realize their potential to score above men and reclaim their rightful status in the society (Rai, 2012). With need and emphasis on gender diversity at the workplace, research about

women and their belief systems can play a critical role in understanding and creating approaches to advance the careers of women.

Moreover, majority of research on LOC studies till date is based on the western countries with few from Asian, African, Middle- East countries (Cheng et al., 2013; Mersha & Sriram, 2019; Yang & Weber, 2019). Cheng et al. (2013) have noted that the “mean-level differences have been found across cultures”(Cheng et al., 2013, page 153) in the LOC scores of the sample studied. According to Hofstede's dimensions(Ann et al., 2006), the western world is more individualistic while the non-western, especially the Asian countries, are collectivists societies. Culture impacts the development of LOC (Raja et al., 2004), hence study of LOC of women in the Indian cultural context could add value to the workplace retention of women talent, which seems to have huge pipeline leakage. Cultural differences also necessitate academic research based on non-western countries like Asia and Africa (Mersha & Sriram, 2019).

Literature Review:

Understanding the Concept:

Julian Rotter of the University of Connecticut introduced the concept of Locus of control. Locus of control is conceptualized as a hierarchical construct (Wang et al., 2010) with generalized LOC at the highest level. Generalized expectancies for a locus of control reveal essential personality characteristics, yet only allow for broad, rather than specific, behaviours predictions from limited data (Kormanik & Rocco, 2009). It is a scale designed to study the attribution of life events to internal vs external causes and it also has a subscale namely are health, marital, parental, work, environment, stress etc. (Wang et al., 2010; Yang & Weber, 2019). Locus of control is a belief or value-oriented characteristic rather than a personality characteristic (Ann et al., 2006). According to Macan et al., Spector in his seminal work found that the locus of control has a greater co-relation with organizational variables than general measures of locus of control (Macan, Therese Hoff, Trusty, Micheal L ; Trimble, 1996).

Earliest of the studies to understand beliefs and controls was conducted by Phares (1957) using a colour matching as an ambiguous task. He found that the quantum of increase or decrease in activity after the success or a failure were more significant in skill instructions than under chance instructions. It was Phares who developed a 26-item scale to measure behaviour control. Various authors modified and refined the scale for accuracy and validity. The final scale that Rotter considered for use is a 29-item scale with six fillers items as a forced-choice test. Rotter's scale is consistent irrespective of the methods like questionnaires, Likert scale, interview assessment, or rating from storytelling. Through various construct validity test, Rotter hypothesised that generalised expectancy is present, can be reliably measured and that it can predict logical behavioural outcomes (Rotter, 1966).

Differences between Internals and Externals:

Locus of control can be internal or external. When individuals believe that they influence events and outcomes in their life, they are called internals while those who believe that their life is governed by forces (powerful others and chance) on whom they have no control are called externals (Adom & Affumosei, 2019; Ajzen, 2005; Cheng et al., 2013; Findley & Cooper, 1983; Golding et al., 2017; Kesavayuth, Dusanee, Kaung Myat Ko, 2018; Schnitzlein & Stephani, 2016). These belief systems develop over time due to a pattern of reinforcements or environment (Cheng et al., 2013; Johnson et al., 2015). People with

an external locus of control use the power of coercion higher than the power of persuasion and expertise used by internals. People with an internal locus of control are self-confident and resist manipulation, while people with an external locus of control have a feeling of powerlessness (Goodstadt & Hjelle, 1973). Internals are predisposed to consider the work environment positively while externals experience it negatively (Wang et al., 2010). Internals are ideal, and externals are realistic about their assessment about the job market demand for their skills, obligations to friends, family and cost of training. Human beings with an internal locus of control believe that the environment responds to personal agency, rewards are predictable and have an indirect positive view of an impact on the environment ((Adom & Affum-osei, 2019; Yang & Weber, 2019) even in countries which are heavily controlled by the government, eg China. Internals were found to have a higher entrepreneurial intention, as well as decision making than the external (Adom & Affum-osei, 2019; Selart, 2005). Internal locus of control seems to have an "indirect positive impact on the environment" (Yang & Weber, 2019). The construct does not focus on control over the environment (natural), but one can control one's action in the environment (Kormanik & Rocco, 2009). Internal controlled people invest more in health capital, perform better in cognitive tests, invest in precautionary savings and with risky assets, mothers invest more in their children and their cognitive or emotional development (Pia Pinger, Sebastian Schafer, 2018). Internals are much better in their response to stress, while externals may be more responsive to a need for communication with external stakeholders (Lefcourt, 1984). The internals are more likely to seek help and positive (Gianakos, 2002).

High individual motivation to achieve is because of higher internal orientation (Findley & Cooper, 1983). Internal- External (I-E) does not have a linear relationship with adjustment. In case of failure, an external will not accept maladjustment or passive behaviour as the reason (Rotter, 1966). People with external locus of control also endorse extrinsic work values (Makri-Botsari & Stampoltzis, 2020). Speaking about money as a source of power, the internal are cost conscious, while for the externals it is a tool for evaluation and they are less generous in its use (Lim et al., 2003).

Relationship with other concepts

Rotter referred to various previous studies of Wyekoff and Sidowsky (1955), Cohen (1960), Goodnow and Pettigrew Feather (1955) to develop his concept.

LOC is either derived from or forms the basis of the study of various concepts like chance or skills games, ego control, planned behaviour control, perceived control, perceived self-efficacy, the illusion of control etc.

The concept of **ego control** denotes "confidence and ability to deal with reality" (Rotter, 1966, page 4) but locus of control has no relationship with ego control. The study of Riesman (1954) propounded that people are driven by internal goals (within) or external forces (without). On the basis of this study, Rotter propounded whether an individual believes that his or her behaviour, skills and internal disposition, has any impact on the outcomes or reinforcements.

Two interrelated concept from which LOC are theory of planned behavior (Bar-Lev et al., 2019; Sparks et al., 2002). and perceived behavioral control. The former considers three attributes of beliefs - behavioral, normative and control. **Perceived behavioural control** denotes a subjective degree of control over the performance of the behaviour itself.. (Sparks et al., 2002). Perceived behavioural control (PBC) has two components – self-efficacy and controllability. They are not dependent on each other nor

incompatible to each other (Sparks et al., 2002). According to the theory of planned behaviour, perceived behavioural control refers to the capability of performing a given behaviour, availability of resources (it's not about internal or external but presence or absence) and the self-belief that they can overcome the challenges (Sparks et al., 2002).

Perceived self-efficacy(Bandura, 1977, 1993) is a concept about people's beliefs and their capabilities to exercise control over the functioning and events that affect their lives. (Sparks et al., 2002). However, efficacy expectation is the conviction that one can successfully execute the behaviour required to produce (specific outcomes). Consistent with this definition, perceived self-efficacy is said to refer to "beliefs in one's capabilities to organise and execute the courses of action required to produce given levels of attainments" (Bandura, 1998, p. 624)

A psychological concept that is related, but distinct from the locus of control, is the **illusion of control**, which is defined as people's unjustified belief in their ability to control events they cannot influence (as in gambling) (Langer, Marcus, Roth, & Hall, 1975,).

Locus of control has been studied over last 50 plus years (Cheng et al., 2013; Golding et al., 2017) in combination with other personality traits/behaviour like achievement, social recognition, affection, motivation, self-efficacy, self-esteem, aggression, academic performance, wage determination, job satisfaction, job performance, business success, hopefulness/hopelessness, job attitude, environment etc. (Adom & Affum-osei, 2019; Bar-Tal, D., Bar-Zohar, 1977; Golding et al., 2017; Groves, 2005; Hatstrup et al., 2005; Judge & Bono, 2001; Kesavayuth, Dusanee, Kaung Myat Ko, 2018; Mutlu et al., 2010; Schnitzlein & Stephani, 2016; Yang & Weber, 2019). It is the ecological validity and historical context, that ensures the continued interest of research scholars in the locus of control construct and its application (Lefcourt, 1992). But most of the studies are inconclusive or contradictory (Ajzen, 2005; Ürü et al., 2011).

Development of locus of control in lifetime

Rotter assumed that intention as the immediate antecedent of behaviour (Rotter, 1966). Later studies try to indicate that the influence of parents is significant in the development of internal locus of control due to consistent parental encouragement or discouragement of autonomy. There are many influences in developing the internal locus of control of the child- parents, friends, teachers, peers and the child's academic performance.

Locus of control also positively correlates with self-esteem and emotional stability (Judge & Bono, 2001). Locus of control is proven to have an impact on educational attainment, labour contracts, rate of offers, offer distribution, the arrival rate of offers (McGee, 2015).

Confusion and Contradictions:

Locus of control beliefs are not compatible with specific behavioural tendencies and hence cannot be predicted accurately (Ajzen, 2005). Locus of control seems to have weaker relations with higher-order core self-evaluation construct (CSE)(Johnson et al., 2015). Literature also could not conclusively prove the relationship between children's control belief and their achievements (Findley & Cooper, 1983). Locus of control is not able to predict social and political involvement, as logically internals should be able to influence the political process, but studies could not establish the same conclusively (Ajzen, 2005). The items on the I-E scale are not able to discriminate individual in a sample (Rotter, 1966).

LOC being a personality predictor, one should see it in action - the internality or externality - without which it is difficult to establish the impact. Unfortunately, the internal versus external locus of a control factor is often confused with control or lack of control over the performance of the behaviour. Perceived control over behaviour (all behavioural actions) is understood as internal locus of control, while the perception that non-behavioural factors cause all outcomes are understood as external locus of control. Internal or external locus of control has no bearing on perceived control over the outcome. "The ease or difficulty of performing a behaviour is conceptually independent of internal versus external locus" (Sparks et al., 2002)

Achievement/ Performance:

Achievement and locus of control are closely related as success gives people more self-control and enhances their self-belief (Findley & Cooper, 1983). People with internal belief are alert to pick up cues from the environment for their future behaviour, and they improve the environment. (Groves, 2005). In the case of achievement, there seems to be a weak but positive relationship with the locus of control (Ajzen, 2005).

Locus of control is the most significant factor which influences academic performances. According to Findley et al., there are 275 tests and nearly 100 reports which discover the relationship of academic achievement with the locus of control (Findley & Cooper, 1983). Locus of control is found to be a significant predictor, predicting whether the child in 8th grade will complete his graduation or not (Coleman & Deleire, 2015). Schooling and personality are highly correlated, so it follows that the fostering of behavioural skills may be one mechanism by which schools increase potential earnings (Groves, 2005).

Learning

Concept of high-level learning of Harlow(Harlow et al., 2014) emphasised that the learners differed in their expectancies between behaviour and its outcome. In the learning process, locus of control is hypothesised as a critical variable wherein individual differences exist to the extent they attribute personal control over learning. Relationship of LOC with professional training was found weak as the content of the training was not considered in the study (Lefcourt, 1984).

Non-cognitive skills like emotional stability, social skills or locus of control develop at a different stage in life than that of cognitive skills (Peter & Spiess, 2016). Non-cognitive skills today are being considered critical at all levels and positions in the organisation (Schnitzlein & Stephani, 2016).

Rewards and Reinforcements :

Rotter propounded that locus of control is not a characteristic, but a continuum wherein human learning should be understood or interpreted in the light of the position on the continuum of internal to external control. People at either end of the scale have extreme personalities (Rotter, 1966). It does not refer to one situation or context. Individuals do differ on internal or external within the same situation as well (Rotter, 1966). One of the recent studies also highlights that both the constructs of locus of control should be measured separately (Gore et al., 2016). A high score on Rotter scale is considered that an individual is more external or fatalistic with a belief system that hard work and effort does not get rewarded and attributes success or achievement to luck, fate or good fortune (Groves, 2005).

Rotter's social learning theory formed the basis of the concept of reinforcement. Reinforcements strengthen the expectations that a particular behaviour will be repeated after the reinforcement (Kormanik & Rocco, 2009). Once a pattern of behaviour reinforcement is set, expectancy is eliminated. When the subject sees that a particular event did not occur because of his or her behaviour, the occurrence of the behaviour will not increase the expectancy (Rotter, 1966). Tasks which are engaging even if they are without any rewards, results in better performance than a task with lesser engagement and higher rewards. Rewards have a positive impact on performance for a limited period, and then it stops improving performance (Benabou & Tirole, 2003). If the reinforcements are given too often then the subject perceives the task as a skill task (Rotter, 1966). If the rewards scheme undermines employee's intrinsic motivation, it is counterproductive (Benabou & Tirole, 2003).

Internals are more likely to set challenging goals and achieve them compared to the externals. Goal setting itself ensures higher performance (Wang et al., 2010). Employees who consider themselves as competent are critical for better productivity, they also deliver a better performance where the environment as more predictable and controllable (Johnson et al., 2015).

Job Search

In the context of job search, LOC has an impact on the efforts that an unemployed person puts in the job search. One may believe that he/she can achieve a goal because they have the knowledge or confidence (internal factor) or because there is a massive demand for their skills (external factor). Similarly, they may believe that they have limited control over getting a job because they are not confident of applying to the advertisements of vacancies (internal factor) or because they noticed many responses to the vacancy (external factor). The internals believes that each application gets submitted increases their chances of getting the job offer (McGee, 2015). Externals believe that their efforts are less likely to result in a job offer and hence put in lesser effort in job search (Bowles et al., 2001) than their external counterparts—but internal job seekers have higher wage expectations because they believe offers are more conditional on their search effort (McGee, 2015). Internals intentionally look for job opportunities that provide them with mobility, career growth (Lefcourt, 1984) and an elbow room to utilise their skills. Employees with an internal locus of control seem to seek out mentoring relationships at the workplace to deal with the new environment-related stress. They also tend to get more career-related support and role modelling rather than psycho-social support (Banerjee-Batist et al., 2019).

Locus of Control and Well Being:

Daily hassles and anxiety predict lower locus of control. Positive health behaviours are associated with locus of control, and it predicted negative health symptoms (Ryon & Gleason, 2014). Locus of control provides a consistent result of playing a pivotal role in managing work and health conflict (Noor, 2002). It is also noted that external locus of control is more associated with well being rather than internal locus of control (Gore et al., 2016)

Citing Ward and Kenndy (1992), the researcher states psychological well being is affected by the internal orientation of perception of control (Mart & Garc, 2002). Well-being can be measured through job satisfaction and distress. Study of Loc in relation with job variables like role conflict, role ambiguity, emotional exhaustion shows a positive correlation between the external locus of control and stress. There is an indirect and positive relation with emotional exhaustion and a negative relationship with job

satisfaction (Hamwi et al., 2014). In the case of health, locus of control could not predict a wide range of health issues (Ajzen, 2005).

Researchers have cited conflicting findings where some studies consider the external locus of control resulting in aggression, while others believe the internal locus of control resulting in aggression (Deming & Lochman, 2008). Aggression as a power is used by managers when the outcome of the workers is not satisfactory and feels that he/ she has no power on the worker. Aggression may be a reaction to this lack of control. When power is given to psychologically powerless, they tend to use coercive power especially when they must influence another resistant person. Locus of control and power are related concepts (Goodstadt & Hjelle, 1973). Anger and impulsivity are positively correlated while internal locus of control is not. Internal locus of control results in happiness and healthy behaviour. Individuals who behave aggressive may not believe that they are responsible for situations in which they are successful.

Locus of Control and Economic Behavior:

Studies exploring the correlation between economic success and locus of control are inconsistent (Groves, 2005). People with a high internal locus of control are more likely to react to random outcomes in their investment decisions than individuals with a low internal locus of control (Pia Pinger, Sebastian Schafer, 2018). Internal locus of control results in inefficient choices or behaviours, especially in case of investments (Pia Pinger, Sebastian Schafer, 2018). Students who believe in an internal locus of control will be able to invest in human capital. If they believe that their human capital investments or other "internal" factors will have a substantial impact on their future opportunities, they might be more likely to complete high school or attend college and get better paid (Schnitzlein & Stephani, 2016). Many psychological or personality traits influence the labour market outcomes, and this poses a challenge for researchers to isolate one single measure, such as locus of control. But the research of Nyhus & Pons, 2005, concluded that emotional stability has a positive relationship with productivity. Employees, primarily male, with an internal locus of control, have a higher probability of getting paid better, get a better raise or correction of salary compared to those with an external locus of control (Schnitzlein & Stephani, 2016).

Women and Work-Family Conflict

Women professionals today form almost about 50% (Catalyst, 2018) of the workforce but at leadership level it hovers around 5 to 10%. Presence of women at the higher echelons violates the social norms; despite this, some women succeed. High-achieving women may share certain personal characteristics, beliefs, and experiences, regardless of the countries in which they live (Ann et al., 2006). These women do overcome the barriers (Ann et al., 2006), some with the help of the significant others and most with their own belief systems. Although high achieving women may have a commonality in their characteristics, beliefs and values, there is an impact of socialising on their characteristics as they are required to follow other members in their culture (Ann et al., 2006). Having said that when organisation support women and provide constructive feedback, it improves their confidence, and they can overcome the barriers to better their career and in turn have better organisational commitments (Sturges et al., 2010).

Women, with an internal locus of control, when take charge of work situation “derive a sense of effectance through one’s job in the organization” (McIntyre, 2017, page 396).

Women whose mothers are liberated in their belief and also can express their beliefs, have confidence in self and develop an internal locus of control early on in their childhood (Ghaffaradli-doty & Carlson, 1979). Locus of control seems to be formed during the childhood and becomes stable as the person reaches adulthood (Cobb-clark, 2015; Coleman & Deleire, 2015; Groves, 2005; Marks, 1998; Schnitzlein & Stephani, 2016), and hence the variance in the child's Rotter score is age-related (Groves, 2005). As one ages, the relevance of social norms increases and there is a drop-in internality, especially in female population. Age norms, social pressures and adverse life events changes their locus of control (Kesavayuth, Dusanee, Kaung Myat Ko, 2018). Any major life event does have an impact on internality and women go through at least five stages from childhood, puberty, marriage, childbirth, menopause. The less control the individual perceives, the higher the likelihood for depression (Cheng et al., 2013; Kormanik & Rocco, 2009).

Locus of control is the key moderator but has an insignificant impact on relationship between work-family conflict and job satisfaction (Noor, 2002). Women with higher self-efficacy can better balance the work-life conflict belief (Ann et al., 2006). Higher the LoC, higher is the work-family conflict for these women (Noor, 2002).

As per Findley et al., it was Lefcourt who concluded that correlation of locus of control and academic achievement is mediated not only by gender but also by age (Findley & Cooper, 1983). If a child undergoes a traumatic childhood, then it may develop an external locus of control. Only when the parents are found to be nurturing, warm and supporting, does the child develops confidence and internal locus of control. Children with an internal locus of control tend to pursue their own educational and career choices (Coleman & Deleire, 2015). Peter & Spiess, 2016, in their research, found a negative association of adolescents' self-belief in self-determination and that of locus of control.

Control was positively related to job satisfaction, as it reduced women's perception of role-conflict (family and work). If the locus of control is high- internal, and work-family conflict low, then women experience high job satisfaction as well as high well-being. Locus of control, aggression and withdrawal are the three factors that affect the wage determination of white women or success in the labour market (Groves, 2005). When women with an internal locus of control face high work conflict, they face low job satisfaction which is equivalent to women with an external locus of control.

Specific types of education may weaken or eliminate the relationship between locus of control and inconsistent risk choices (Pia Pinger, Sebastian Schafer, 2018). Depending on the organisation support, gender and locus of control have an impact on internally focused career self-management (Sturges et al., 2010). People with an internal locus of control actively plan and manage their career, engage in own development, use social networks for career progression, have strong motivation and perform better work (Sturges et al., 2010). Women regard their careers as an outcome of their inherent characteristics, agency and a desire to accept a challenge that can lead to intrinsic satisfaction. For them the structural enablers or the barriers do not matter (Carvalho et al., 2018).

Women who have an internal locus of control can manage the stress better than the one with an external locus of control. LOC enables them to deal with the stressful situation as well as the perception of stress (Mart & Garc, 2002). When people believe that they have the required resources and opportunities (e.g., skills, time, money, cooperation by others), then the obstacles they are likely to encounter are few or manageable, they have confidence in their ability to perform the behaviour and thus exhibit a high degree of perceived behavioural control (Sturges et al., 2010, page 128). The converse is also true.

Internal locus of control enables women to make less rational decisions, focus more on centralisation and formalised processes. Optimistic women take strategic decision based on subjective rather than rational factors but formulate rules to deal with a dynamic environment (Ürü et al., 2011). Women with an internal locus of control have a negative effect on rational strategic decision making (SDM) whereas a positive impact on the formalised and centralised process of SDM in a dynamic environment (Ürü et al., 2011). Risk-taking and high achieving women entrepreneurs make a less rational decision. Having said that the researcher (Kundu and Rani, 2010, page 337) cite the study of Lee and Tsang (2001) to establish that need for achievement and Locus of Control have a direct impact on the venture growth (Kundu & Rani, 2010). Women, especially in the non-western countries, seem to have a higher fear of failure and an external locus of control that impacts their entrepreneurial ability (Mersha & Sriram, 2019).

While in the case of achievement and innovation, there are differences between males and females but not on personal control and self-esteem. There may be differences between generations within the same gender (Kundu & Rani, 2016). The difference is also between older and younger generations of females than males (Kesavayuth, Dusanee, Kaung Myat Ko, 2018). Where the locus of control has a positive impact, there is a difference between males and females in financial risk attitude.

Research Methodology:

Locus of Control as a concept was developed and applied to various areas since 1966. It is a mature topic (Torraco, 2005) which needs a review and relook in the context of women, their career planning and with application in Indian or Eastern World context.

Search was conducted in Scopus database to identify research highlighting the relationship of locus of control and women at the workplace, career management and eastern country content. Since locus of control is a concept, some of the available seminal work in this area was considered to form a base. These were summarized to identify the researchers' findings specifically highlighting the relationship or correlation of locus of control with other concepts of personality, behaviour, gender, well-being, performance etc. with an intent to find if LOC has a specific impact on women and their career.

Considering a vast application and usage of Locus of control scale, a summary of correlation of locus of control with other scales is provided in Appendix -A. The co-relations are positive with some scales and negative with others. Search was further expanded to include references in the base papers to look for areas related to workplace behaviours like aggression, job search, job performance, rewards and reinforcement, stress management, economic behaviours - earning, salary, profit well-being etc. Considering the gender inequality issues for many decades now, the locus of control studies also focused more on men than women. With increasing workforce participation of women, there is an urgent need for academic research on what makes women successful at the workplace in countries like India.

On Scopus index alone, one can find 10400 research papers for the period 1970 to 2019. A thorough review of the entire body of research available is beyond the scope of this paper. On further slicing the data it was found that the research on locus of control and its application is limited to journal articles in the prominent area like Business and Management (940), Psychology(4836), Social Science (2844), Art and Science(794), Medicine (4359). Given this data, it would not be incorrect to conclude that locus of control has found predominant application in non-business areas. There is a significant scope of the application in the Business and management area.

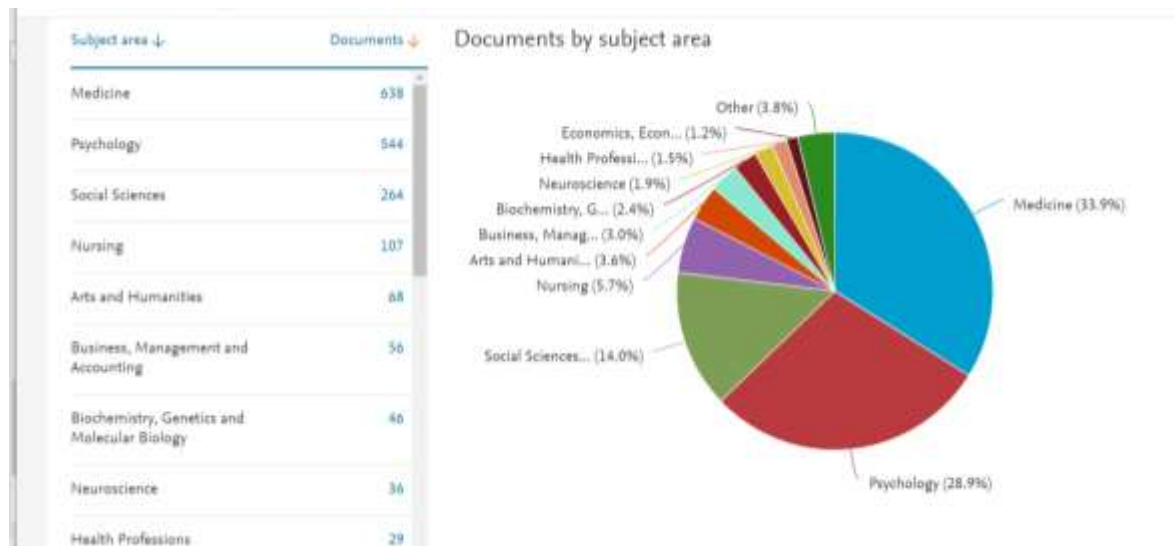


Figure 2 : List of research on locus of control and areas of studies found on the Scopus database

Since the purpose of this paper is explore available literature on women and career-related research, the search of the terms "locus of control" and "women" in combination on Scopus database, drastically reduced the numbers to 1,157 with only 56 articles in Business and Management application. Of these 1157 articles, there were 1087 articles, 33 book reviews, 19 conferences and seven book chapter. Some of the prominent authors with more than six articles had published as co-authors - Golding L & Nowicki S or Darviri & Chrousous. Most of the experts on the locus of control like Lefcourt, Judge etc. have focused on the generic locus of control, especially, the construct.

This paper as a literature review is an attempt to construct an objective summary of available research evidence (Wallston & Wallston, 1978) on the locus of control (LOC) and its application particularly in the study about women. Although there are different types of literature review (Grant & Booth, 2009), there is no prescribed method to conduct and structure a literature review (Kormanik & Rocco, 2009) for a specific topic or area. One can experiment with the method and subject.

Peer-reviewed research papers were analysed using rigorous research gap identification framework (Müller-bloch et al., 2000). According to the framework, there are two ways of looking at the gap – Characterization (Contradictory Conflict, Knowledge void, Action Void, Methodological Void, Evidence Void, Theoretical application void) or Presentation, Parallel or Sequential.

The literature review on the locus of control is presented as "Sequential Presentation – the synthesis is presented first being followed by the presentation of research gaps" (Müller-bloch et al., 2000)

Findings and Discussion:

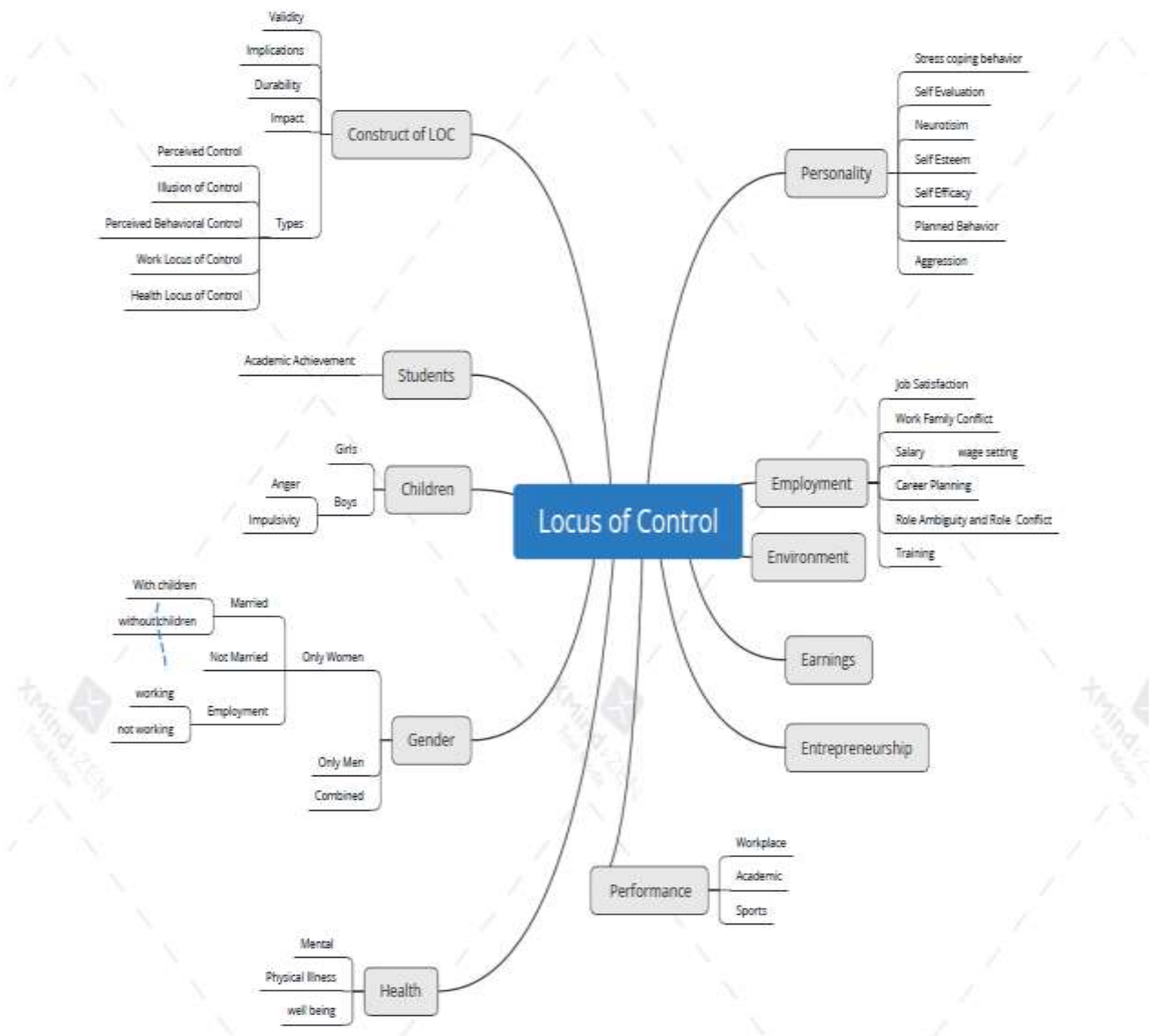


Figure 3: Summary of Locus of Control construct and its linkages (Developed by the author)

Over the decades of research, LoC seems to be studied with various other concepts, but there is a limited study in the space of working women. Figure 1, presents the pictorial representation of multiple concepts studied along with Locus of Control. Rarely is there a concept with multiple scales being developed as its application. Here is the list of popular measures of Locus of control.

S No	Names of the Scale	Year
1	Locus of Control Scale- Bailer (Bialer, 1961; Findley & Cooper, 1983; Kormanik & Rocco, 2009)	1961
2	Adult Locus of Control Scale - Nowicki-Strickland (Duke & Nowicki, 1973; Finch et al., 1981; Lefcourt, 1991;	1973

	Nowicki & Strickland, 1973)	
3	The Intellectual Achievement Responsibility (IAR) Scale(Findley & Cooper, 1983)	1965
4	Internal- External Locus of Control Scale - Rotter (29 items)(Rotter, 1966)	1966
5	Work Locus of control - Spector(Macan, Therese Hoff, Trusty, Micheal L ; Trimble, 1996)	1988
6	Internality, Powerful others and chance scales-Levenson(Brosschot et al., 1994; Lefcourt, 1992)	1974
7	Mental health locus of control scale - Hill & Bale(Hill & Bale, 1980; Lefcourt, 1991)	1981
8	Internal vs external control of reinforcement inventory (Kormanik & Rocco, 2009)	1973
9	Internal- External Locus of Control Scale - Rotter (10 items)(Rotter, 1966)	
10	Spheres of Control Scale- Paulhus's (Paulhus & Van Selst, 1990)	1983
11	Multidimensional Locus of Control Scale -Conell (Deming & Lochman, 2008)	1985

Table 1: Locus of Control Scale Measures

LOC was studied in comparison with a battery of tools during and after Rotter's time, but most of the studies were found either inconclusive or contradictory. Most of these studies have used more than one variable to compare with LOC, which may be the reason for confusing and contradictory findings. LOC was also found to either play a mediating or a moderating role but very rarely a singular impact. Even if some studies found its direct impact, there are other studies which contradict the findings. The outcomes of research changes either with the context of the respondents or in association with the tool utilised.

As a tool, much research has been done to prove the predictive validity of personality traits, but results have been unsatisfactory, which also is the case with Internal-External Scale, also known as Locus of Control (Ajzen, 2005).

There is limited research on locus of control as a single variable and its effect on women occupying a leadership position. Most of the study is quantitative. Locus of control as a seminal work was conducted with reference to American culture, and hence there is a vast scope to discover a country or culture-specific impact of internal-external control beliefs (Cheng et al., 2013; Martínez García et al., 2002; Rotter, 1966). There is a little understanding both in academic literature as well as corporate, of how women surmount the challenges. Also, the national context and culture of such women need deeper understanding for corporations to succeed (Ann et al., 2006).

Individual locus of control cannot be extrapolated at country level(Ann et al., 2006). In the context of Hofstede dimension (Carrasco et al., 2015; Smith et al., 1995), the eastern cultures are different than western, and if the locus of control is impacted due to the cultural as well as the socio-economic status of the country, then there is a need for in-depth study. Individualistic cultures like that of America; where Rotter based his study; might find it easier for exercising control, while in collectivists culture like India, that may be difficult(Cheng et al., 2013). But since cultures change and there is globalisation, mobility of

the workforce, this premise needs to be tested and validated. A study of cross-cultural effects may enable better cross-cultural training and development of talent, especially women (Black et al., 1990). Probably, the divide between western and non-western world is narrowing, and there are adoptions of western values in eastern culture and vice versa. Study of concepts like LOC which were developed in individualistic western value system may help in understanding the globe-trotting millennials at the workplace. Most of the research is based on either children or non-working or unemployed population (Findley & Cooper, 1983).

Personality and environment together have an impact on work-family conflict. The damaging effect of the support system and its adverse effects on women needs further exploration.

Application:

Some of the applications of the locus of control construct are summarised:

- It can be used for the worker training program to include behavioural skills, train them for higher-paying jobs, reducing the economic and social costs of unemployment (Groves, 2005).
- Locus of Control may also help develop models to show that education increases earnings (Groves, 2005).
- The construct can be used to identify potential women employees and groom them for leadership and board roles.
- Since Locus of Control gets formulated right from childhood stages and has the potential to change (Kesavayuth, Dusanee, Kaung Myat Ko, 2018), focused intervention and grooming can enable girls to be more self-confident.
- Understanding the reservation -wages (the wage at which the job seeker is willing to work) and search effort decision may help the policymakers to direct their effort and speed the return to employment (McGee, 2015).
- The policymakers can take into account the locus of control information of the unemployed person during policy formation, counselling and providing advice to the job seekers in a correct direction although they cannot influence their personality traits or beliefs (McGee, 2015).
- The individual can also search for jobs in the industry where the internal locus of control is an essential requirement and hence can demand higher reservation wages (McGee, 2015).
- To ensure better job matches and retention of talent for the corporates educational institutes, as well as Corporates, can also use LOC to mentor students to discover jobs as per their internal or external beliefs.
- Understanding LoC and its inclusion in national studies in India can improve effectiveness while also driving focused efforts for improving women's labour participation, which is currently on the decline.
- Since locus of control is one of the critical characteristics of entrepreneurship orientation along with risk-taking propensity (Ahmed, 1985), the findings of the study can be applied to identify and groom women early on in their life into entrepreneurship. The early-stage could be as early as matriculation because students at the matric level have a higher achievement orientation than at the MBA stage (Kundu & Rani, 2016).

Conclusion:

Locus of control as a variable of personality trait has been well researched and applied in various disciplines. The results of the studies have been either inconclusive, conflicting or confusing. In all its application, it has methodological or theoretical problems or issues. Despite all the criticism, when the scale is used with other tools, it does help in identifying and predicting behaviour. Internal locus of control is found to be impacting even the team effectiveness and efficiency (Khan et al., 2014). These findings can be used for various learning and counselling initiatives, especially in case of women.

Further probe is required if the change in locus of control impacts the career decision of women. They get married and settle down in adult age, wherein the internal locus of control may become external, especially in case of countries like India, where the significant others like husband, in-laws play a pivotal role in the decision of women's career choices

Future Scope of Study:

Since locus of control is an internal characteristic, a qualitative method can elicit finer nuances of how women identify their inner radar, how do they use and explore the same. Some research shows that locus of control is a learnt behaviour, so when and how do women learn? Comparative study of locus of control as gender differences is limited; the differences are studied for women vs female students. Locus of control to understand the career management process of women in Indian corporate context should be explored. Since LOC changes over a period (Kesavayuth, Dusanee, Kaung Myat Ko, 2018) and it is a continuum, a longitudinal study to chart the career growth of women in the corporate ladder in the Indian context can be a potential area of exploration. "Bilocals" (Marks, 1998) may adapt to integrating internal as well as external locus of control into their life (Marks, 1998). Hence a study of people moving across culture would be beneficial in many workplace practices (Black et al., 1990). While well-being is significantly related to LOC, the coping mechanisms, as well as strategies, can be explored to counsel patients as per their beliefs. The reasons for why high ability externals were more indecisive than high ability internals are yet to be studied. A direct correlation between locus of control and decision making is not established. Does LOC have an impact on career achievement, or is it vice-versa, or do they co-occur? The implications for a career still needs further exploration and study (Lefcourt, 1984).

Another contrast interest to study could be the difference in the locus of control of working versus non-working women. Locus of control to study potential entrepreneurs may have its limited application. Studying existing entrepreneurs, especially women, can serve as a useful study in grooming potential entrepreneurs and setting role models.

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Appendix - A : Summary of correlation of Locus of Control Scale with other measures (Scales)

S No	Author	Internal-External	Other Scale	Findings
1	Rotter, 1966	60 Item I-E Scale	Marlowe- Crowne Social Desirability Scale	Correlation was "-.35 to -.40"
2	Rotter, 1966	60 Item I-E Scale	James-Phares Likert type Scale	Correlation was ".55 to .60"
3	Rotter, 1966	60 Item I-E Scale	Intelligence	Low co-relation
4	Rotter, 1966	I-E Scores	Adjustment	No Linear co-relation
5	Rotter & Rafferty, 1950	I-E Scale	Rotter Incomplete Sentences Blank	No Linear co-relation
6	Ware, 1964	I-E Scale	Taylor Manifest Anxiety Scale	0.24
7	Efran, 1963	I-E Scale	Taylor Manifest Anxiety Scale (shortened)	.00. Relationship with striving for achievement and I-E Control. Tendency to forget / repress failure in boys high in internals
8	Adams- Webber 1963	I- E Scores	Story Completion Test	High co-relation
9	Adams- Webber 1963	I- E Scores	Warner Scale (lower class)	No significant social class difference
10	Franklin, 1963	I-E Scores	Socio economic class (higher class)	High relationship socio economic class and internality. Achievement Motivation
11	Johnson, 1961	60 Item I-E Scale	Political Affiliation	No Significant difference
12	Bialer	23 item James Phares Scale	Children	
13	Crandall, Katkovsky, and Preston, 1962	I-E Scores	Intellectual Achievement Responsibility	Free play achievement behavior in boys and not in girls
14	Battle and Rotter, 1963	I-E Scores	Projective test- situations modeled on Rosenzweig picture frustration approach	.42 co-relation, which is significant
15	Seeman and Evans, 1962	60 Item I-E Scale	Concept of Alienation	Significant

Locus of Control: Conceptualization, Application and Predictive Ability - A Literature Review

16	Seeman 1963	I- E Scores	Amount of Information remembered	Significant
17	Seeman 1963	I-E Scores	Petition signing	Failed to predict who would sign and who would not
18	Seiman, 1964	I-E Scores	Union Membership	Significant relationship to union membership, political knowledge
S No	Author	Internal-External	Other Scale	Findings
19	Straits and Sechresh, 1963	I-E Scores	Smoking	Non smokers internal
20	James, Woodruff, and Werner ,1965	I-E Scores	Smoking	Internals quit smoking and did not return in males. No significant difference in females
21	James, Woodruff, and Werner ,1965	I-E Scores	Achievement Motivation	Males as defensive externals or defense against failure. I-E control attitudes cannot be generalized. It is more significant in structured environment than non-structured, especially where there is competition
22	James, Woodruff, and Werner ,1965	I-E Scores	Children Manifest Anxiety Scale	No prediction of either boys or girls achievement motivation
23	James, Woodruff, and Werner ,1965	I-E Scores	Thematic Apperception Test	No prediction of either boys or girls achievement motivation
24	Rotter & Mulay, 1965	I-E Scores	Achievement Motivation	Internals took long to decide on matching standards under skill conditions than did externals but took shorter times under chance conditions and difference was significant. It was opposite for externals with no significant

				difference
25	Rotter & Mulay, 1965	I- E Scores	Manipulation	Internals would resist manipulation and externals less resistive. If Internals sees conformity is in his/her interest, will do so with losing control
26	Strickland, 1962 and Getter, 1962	I-E Scale	Verbal Conditioning	No overall relationship with conditionability and I-E Scale. Aware and did not condition were more internal Both studies show resistance to manipulation by internals
S No	Author	Internal-External	Other Scale	Findings
27	Gore, 1962	I-E Scale	Thematic Apperception Test	Internals reacted negatively in subtle suggestion condition (manipulation)
28	Strodtbeck, 1958 (138-195)	I-E Scale	Value Achievement Scale	Mastery in a vocation does not correlated with I-E scale
29	Osipow, Carney, Winer, Yanico, & Koschier, 1980	I-E Scale	Career Decision Scale	In-conclusive Results

Locus of Control: Conceptualization, Application and Predictive Ability - A Literature Review

30	Zuckerman and Alison , 1976	I-E Scale	Fear of success	In-conclusive Results
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