THE INFLUENCE OF LEADERSHIP ON PRODUCT DESIGN AND COMPANY INFORMATION SAFETY, AS MEDIATED BY WORKPLACE AND EMPLOYEE FACTORS

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August, 2019

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ABSTRACT

Organisations today are aware of the importance of designing excellent products and of protecting their sensitive/proprietary information. However, in assessing both of these, researchers and organisations alike are fond of focusing externally by assessing product design via customer ratings, purchases, etc. and assessing company information safety from the perspective of outsider threats such as hackers. The present study looks within organisations in assessing both of these key variables by determining employee perception of leadership based on the social identity theory, how this perception influences said key variables, and how this influence is otherwise mediated by variables classified as workplace and employee factors. It is found that leadership influences product design and company information safety only via some of the mediators considered in this study. The present study advances theoretical and practical understanding and application of the social identity leadership theory as well as sheds light on subtle and insufficiently investigated relationships between the variables of concern.

INTRODUCTION

Do you know about the so called 20% time rule that was implemented in Google by its former CEO Eric Schmidt? It's an interesting organizational policy allowing Google's employees 20 percent of their work hours, to work on any personal side project which they deem to be potentially profitable for Google. This 20 percent rule is interesting because it quite unique and most organisations do not function this way. Also, the rule has been credited with some Google's most successful products so far including Gmail, AdSense, and Google Talk (Ross, 2015). This policy by Google can be said to give the employees a certain amount of influence over the company's product design process and outcome. On the other hand, there's the case of the 'Nintendo Virtual Boy' product which arguably failed because of a premature release by the company, whereby the game's engineer Gunpei Youkoi had reportedly objected to the company's plans for release (Scott, 2011).

Of the previous instances, the former highlight's an instance whereby a company's (Google) management instituted a workplace environment that promoted creativity and encouraged its employees to be proactive decision makers in the design of products for the company. However, in the latter instance, the unaccommodative influence of management is shown. Ultimately, the results show that the former had major successes while the latter was a major failure. This brings to mind a quote by Hoffman; "the smartest companies don't tell their employees how to innovate, they manage the chaos" (as cited in Huspeni, 2017). But how much influence on the success/failures can be ascribed to management (leadership), employee individual factors and to the workplace environment?

As employees are the ones responsible for the designs of products, how these employees perceive their work environment(leadership/management and colleagues) is therefore crucial to the designs of product for a company. The same applies to company information safety. How employees perceive their work environment will also determine their likelihood to compromise or protect their company's information safety. The link between product design and company information safety is also in the fact that when there are employees working on a new design, there is always the risk that one or more of those employees could compromise the sensitive information of the new design, and this risk is only greater with greater amounts of employees.

Speaking of company information safety, in Russia, one organization promises experienced bankers around $2,000 per month for "one hour of work per day." In Mexico, another ad promises employees from well-known banks high pay with little risk, on the condition of "absolute discretion." This is today's competitive job market for people who are willing to be criminal corporate insiders by leaking sensitive company information. Amazon recently said it was investigating claims that company insiders across Asia were making money by selling retail secrets. In their case, corporate insiders may have been trading in proprietary information to help Amazon marketplace sellers based in the region get an unfair sales advantage. But Amazon is far from the only company facing insider threats, especially in locations in Eastern Europe, Russia, Asia and North Africa. There, employees can sometimes quadruple their salaries or more by working with a criminal enterprise to sabotage their own employer.

The above is from Fazzini (2018), where she discussed the proliferation of insider threats in different companies and different industries, as even trusted employees are reported as finding themselves confronted with simple but illegal 'side jobs'. Findings on how the dark web has become a market place for buyers and sellers of company proprietary information as well as the large sums of money that are usually offered is also discussed in this article. Tech moguls such as Apple, Amazon, and IBM are cited as being worried and the cases of Xiaolang Zhang - a Chinese employee of Apple who was arrested for stealing proprietary information to take back to China on the premise that he was moving back to China to be with his ill mother, and Jerry Jingdong Xu - a Chinese employee of Dupont who was alleged to have stolen hundreds of millions of company secrets, were brought up.

The spillage of sensitive company information by its employees are an unappealing but very real phenomenon in the corporate world today and the occurrence of this phenomenon has only been increasing over the years. Still, while some companies are victims of this threat, some others remain untouched. While there are many possible reasons why some employees may engage in leaking/selling sensitive company information (e.g financial gain, or other personal reasons such as hate for the owner or management of the company; Sarkar, 2010), some employees do not engage in these acts, why is this?

The research questions of this study are thus; 'what is the influence of leadership on product design and company information safety, and how is this influence mediated by workplace and employee factors?'

THEORETICAL FRAMEWORK

PRODUCT DESIGN

"The design of a product is an unquestioned determinant of its marketplace success. A good design attracts consumers to a product, communicates to them, and adds value to the product by increasing the quality of the usage experience" (Bloch, 1995). Such is the importance of the design of a product. Whilst many researchers like Bloch have defined or assessed product design in terms of aesthetic characteristics (Crily, Moultrie, & Clarkson, 2004; Reimann, Zaichkowsky, Neuhaus, Bender, & Weber, 2010; Westerman et al., 2012), a few researchers have focused on the cognitive characteristics of product design i.e. the actual function (problem solving ability) of the product (Thomas & Carroll, 1979). However, this study will regard product design as a combination of the aesthetic (affective) and functional (cognitive) characteristics of a product, as conceptualized by Page and Herr (2002), as any successful design must satisfy functional requirements and also be aesthetically pleasing to the consumer (Westerman et al., 2012). Also, it is believed that a company's product design is only as good as the creativity of its design employees, and the amount of creative influence these employees have over the product design process and outcome. These two aspects; "creativity" and "influence" are of focus in this study as the determinants of product design.

From the componential theory of creativity (Amabile, 1983a; 1983b; 1988; Amabile & Pillemer, 2012), individual (employee) creativity is determined by three intra-individual components and an external component. The intra-individual components include; domain-relevant skills (expertise, technical skill, and innate talent in the relevant domain), creativity-relevant processes (flexible cognitive style, personality traits such as openness to experience, skill in using creative-thinking heuristics, and persistent work style), and intrinsic task motivation (or intrinsic motivation). The external component is the social environment. For creativity to occur, all of these components are relatively present, and the external component – the social environment, can influence each of the intra-individual components but mostly the component that is intrinsic motivation. Therefore, from the perspective of the componential theory of creativity, it can be very clearly understood that employee creativity in the form of product design is a result of domain-relevant skills, creativity-relevant processes, intrinsic motivation, and their social environment.

The domain-relevant skills and the creativity-relevant processes can be viewed as individual predispositions that are determined by personality, training, experiences, and formal/informal education (Amabile, 1983b), and that enables one to engage in the process of creativity (Amabile & Pillemer, 2012). However, both the domain-relevant skills and creativity-relevant processes are facilitated by intrinsic motivation, as this (vs extrinsic motivation vs no motivation) will determine how the individual approaches the task (if at all – in the case of no motivation) as well as his/her mental drive throughout the task process until its completion. Intrinsic motivation is largely influenced by the social environment

and is therefore more malleable than the other components (Amabile, 1983a). The intrinsic motivation principle of creativity as articulated Amabile (1983a) posits that the intrinsically motivated states (e.g. engaging in a task because one finds it interesting, meaningful, enjoyable, satisfying, or positively challenging) are conducive for creativity whereas the extrinsically motivated states (e.g. engaging in a task because of the promise of rewards or praise, or the threat of failing to meet a deadline or receiving a negative evaluation) are detrimental for creativity. Although, extrinsic motivation might work well for fuelling operations performance. However, particularly in cases where intrinsic motivation is already high, certain types of extrinsic motivation need not undermine the intrinsic motivation, but rather can synergistically combine with the intrinsic motivation (or at least have no effect) and such combinations will still result in high creativity, satisfaction, performance (Amabile, 1993).

Within the scope of the present study, leadership as well as the workplace factors variables (workplace conflict, perceived organisational support for creativity, co-worker helping and support, and useful feedback from co-workers) which are mediators would constitute important parts of the (work) social environment component of creativity. Of the three intra-individual components of creativity, the intrinsic motivation is the most influential and the most malleable to the social environment, as such where the domain-relevant skills and the creativity-relevant processes are relatively equal, the intrinsic motivation would be the difference between product design employees who are creatively and proactively engaged with their work and their colleagues who are just working for the wages. Leadership as well as workplace environments that only promotes extrinsic motivation will likely breed the latter group of employees, whilst leadership and a workplace environment that promotes intrinsic motivation (e.g. making the work interesting, positively challenging, and meaningful to employees), will likely breed the former group of employees.

Therefore, assuming that the intra-individual variables of domain-relevant skills and creativity-relevant processes are relatively equal amongst employees of any company, or are at least above a minimum standard as this would be the aim during employee recruitment, the intrinsic motivation then that the social environment (in this case; leadership and the other moderators) is able to foster within their employees will likely be the difference between low or average creativity (in employees with low intrinsic motivation) and optimal creativity (in those same employees). Therefore, influence of the independent variable (leadership) and the moderators over the intrinsic motivation of employees will determine employee creativity, which arguably determines the end result that is; product design.

Research into the concept and process of product design has mostly been focused on investigating what the concept is and entails (Sutton & Hargadon, 1996), how the product's physical form influences consumer preference, how product design interacts with consumer experience, market acceptance, and how it interacts with other factors such as brand strength (Page & Herr, 2002). For example; Hekkert (2006) focused on studying product design as it relates to aesthetics and proposed 4 principles based on evolutionary psychology as being the basis for human affective preference for so-called aesthetic aspects of products. These four principles were (1) maximum effect for minimum means, (2) unity in variety, (3) most advanced, yet acceptable, and (4) optimal match. Bloch (1995), as did many other researchers after him (Crilly, Moultrie, & Clarkson, 2004; Westerman et al., 2012), focused on the end result (the product) and how it relates with the customers in respect to their preferences for and responses to the product. In his qualitative study, Bloch (1995) developed a model of customer (cognitive, affective & behavioural) responses to product form, under which he made 14 propositions about the flow of interactions between initial product form to eventual behavioural response to the product form. Examples of these propositions include; "the form of a product elicits beliefs about product attributes and performance", "product forms with a moderate degree of incongruity with respect to existing forms elicit more positive cognitive responses than forms with low or high levels of incongruity" (pp. 20). Meanwhile, Westerman et al. (2012), using experiments, investigated individual preference for rounded rather than angular product forms. Using images of product packaging (chocolate – experiment 1, and water and bleach – experiment 2) they found that individuals did have

a preference for rounded product forms relative to angular product forms, which they expressed in self-report purchase likelihood.

However, what little research that has looked at product design as being influenced by intrinsic or extrinsic motivation of the people (team) involved in product design (West 2002) lacks empircal testing. Therefore, as most researchers have not assessed product design as being rooted in the creativity and creative influences (control) of employees who are responsible for the actual process of product design, and very little attention has been paid to assessing product design as being influenced by leadership and moderated by the prementioned variables within an organization, the present study aims to do just that.

COMPANY INFORMATION SAFETY

In recent years, the benefits of proprietary information and its possible primary strategic role in organizational success has begun dominating the focus of competitive strategy. Research labour towards gathering said information and knowledge-flow systems towards distributing and utilizing said information to generate 'finished knowledge' in the form of innovative products or processes has also become of high importance. Consequently, avoiding leakages in these research-labour and knowledge-flow activities is thus critical (Liebeskind, 1997, p. 623&624).

Proprietary knowledge and other such sensitive information have been described as the "assets and lifeblood" of a firm (Sarkar 2010) and as the basis for its competitive advantage (Mohr, 1996; Posey, Roberts, & Lowry, 2015). A firm's sensitive information are truly very important to its survival and success, just as much as (maybe even more than) the firm's design of products. Whilst product design is very important to the survival and success of a firm, the protection of its proprietary knowledge (which often determines product design in the first place) is also pivotal in both aspects, as a breach of company information security via outsider (e.g. hackers) or insider (employees) attack can result in potential damage to the firm through loss of revenue, loss of reputation, loss of intellectual property or even loss of human life (Sarkar 2010). One thing that most research in organizational information security agree upon is the inadequacy of technical systems alone in securing organizational information (Liebeskind, 1997; Workman, Bommer, & Straub, 2008; Bulgurcu, Cavusoglu, & Benbasat, 2010; Sarkar, 2010; Posey, Roberts, & Lowry, 2015; Shropshire, Warkentin, & Sharma, 2015), as they all stress the expedient roles of employees as the company's greatest strength or weakness in the protection of company sensitive, sometimes proprietary, information. Putting aside the highly investigated outsider threat perspective, and focussing on that of the insider, company information safety becomes dependent on information leakage with causes ranging from employee unwillingness to implement company information security policy (ISP) – negligence, otherwise known as the Knowing-doing gap (Bulgurcu, Cavusoglu, & Benbasat, 2010; Workman, Bommer, & Straub, 2008; Shropshire, Warkentin, & Sharma, 2015), to employee deliberate action towards leaking company information (Mohr, 1996; Liebeskind, 1997; Sarkar, 2010). In both cases the end result is the same - information security is compromised.

Researchers have used the Protection Motivation Theory (PMT) (Maddux and Rogers, 1983; Prentice-Dunn & Rogers, 1986) to investigate the likelihood for employees of a tech company as well as employees of various other companies respectively, to develop protection motivation and intention to proactively engage in protective responses to secure the information safety of their respective companies (see Posey, Roberts, & Lowry, 2015; Workman, Bommer, & Straub, 2008). Workman, Bommer, and Straub (2008), used PMT in assessing the 'knowing-doing gap' – whereby employees know the right measures to take to protect their company's sensitive information, but they do not take these measures. Using survey and observational research methods, they concluded that the 'knowing-doing gap' could be remedied by choosing the 'right' security technology, ensuring employees have the correct perception of vulnerability and severity of information security threats, elevating these perceptions if considered necessary, and showing employees the effectiveness of taking protective measures. Posey, Roberts, and Lowry (2015), also using PMT, and applying a survey methodology,

investigated the motivations for insiders to protect the information security of their companies. Amongst other findings about the applicability of PMT to this field of inquiry, they found that organisational commitment was the mechanism (mediator) through which information security threats to the organisation become personally relevant, and only then are individuals able to become motivated to take protective measures on behalf of their companies.

Considering the studies cited above, a focus on employee protective behaviour can be seen, and that's all well and good for assessing the intention of employees to protect, but what about employees intention to compromise? Although both studies combined have provided a fairly detailed assessment (using PMT) of employee likelihood to proactively protect company information safety, they have however been shy on details concerning the likelihood for employees to actively compromise company information safety. This study will focus on the deliberate action towards protecting and compromising company information safety (and the prediction thereof; (see Sarkar, 2010) using the theory of planned behaviour (Ajzen, 1991).

The theory has it that one's (1) attitude toward a specific behaviour (i.e. the behaviour is beneficial/harmful and/or enjoyable/unenjoyable), (2) his/her subjective norm (i.e. Other's think I should do it and/or others do it), and (3) his/her perceived behavioural control (i.e. I can/cannot do it), collectively influences one's 'intention' to (or not to) engage in a behaviour, and this intention ultimately results in the individual carrying out (or not carrying out) the behaviour. So deliberate action to protect/compromise company information safety, according to this theory, would arise from intention, which in turn is formed as a result of attitude, subjective norm, and perceived behavioural control (see Ajzen, 1991; Smith, 2013)

Sarkar's (2010) research on assessing insider threats to information security, although lacking empirical evidence, conceptualizes insider attacks as resulting from a combination of employee capability, opportunity, and motivation. He urges organisations to assess all three components in determining the likelihood for an insider attack, and he proposes various means of doing this – some bordering on unethical practices, such as surveilling the employees and their families. However, he noted that the motivation component is the most crucial component for several reasons, including the fact that companies cannot always properly diagnose and control for the capability and opportunity component – i.e. companies often need highly skilled people and often have to provide them with access (depending on their needs) and these skilled people could very well be capable of and as well have been provided with the opportunity to compromise the company information security. Also, and more importantly, that employees are capable and have the opportunity to compromise the company information safety certainly does not mean they will, unless they have the motivation to do so.

In assessing intention in employees from the perspective of the theory of planned behaviour, personal attitude and perceived behavioural control cannot be assessed because questions such as "if the opportunity presented itself, would you give away company sensitive information? and would it be for financial gain or for revenge?" would likely inspire social desirability responses, which will corrupt the data received, not to mention the concern for legal sanctions that the respondents will have. Therefore, indirect measures will be used in assessing the components of intention, more specifically, the 'subjective norm' component of intention. This will be done by assessing how much employees think other employees are likely compromise the company's information safety. Hence a high score in this variable would indicate that most people in the company think that most people in the company would compromise the company's information safety. This indirect measure is deployed as a means of avoiding the corruptive influence of social desirability and is also based on the fact that people tend to project their behaviours (what they would likely do) unto others (what others would likely do) especially in cases of high social sensitivity (cases where social desirability is more likely) (see Fisher, 1993; Fisher & Tellis, 1998). Also, there's the fact that individuals are more likely to develop intention to

(and actually) engage in certain behaviours when they subjectively consider those behaviours to be the norm (Ajzen, 1991).

Based on the findings of Posey, Roberts, and Lowry (2015), and the conceptualization of Sarkar (2010), employee intention to leak company information would be counteracted by employee organisational commitment, job satisfaction, and non-existence of turnover intentions. Therefore, although company information safety will be assessed using an indirect approach in this study, the variables of organisational commitment, job satisfaction, and turnover intentions (Frone, 2000) are particularly of interest as possible mediators of the influence of leadership on said motivation. Also, the findings of Workman, Bommer, and Straub (2008), supports our decision to structure the company information safety survey items in a way that partially seeks to gauge employee perception of threat vulnerability of their company, with questions such as "I believe that the risk of sensitive company information being leaked is negligible."

LEADERSHIP

From the instances previously cited of Google, Nintendo, Amazon, and other companies who encounter product design success/failure and company information safety/compromise, one key factor cutting across all of them is the differences in leadership influence. Ever since the study of groups and group behaviour arose, leadership has been a topic that has always caught the interests of behavioural researchers. In defining leadership, several attempts by different researchers have been made, as "the literature on leadership is as plentiful as it is diverse"(Eddy & VanDerLinden, 2006). Van Vugt, Hogan, and Kaiser (2008) defined leadership to be the process of influencing individuals to contribute to the group's goals and coordinating their contributions in the pursuit of these goals. According to Haslam, Reicher, & Platow (2011) leadership is the process of influencing others in a manner that enhances their willing contribution to the realization of group goals. Whilst there are several more definitions and theories of leadership, three concepts remain characteristic of leadership which are; (1) how the followers perceive the leader, (2) how the leader influences the followers, and (3) the shared goals of the group. These concepts are the basis of the leadership conceptualization that is used in this study, which is the one put forth by Steffens et al. (2014), where leadership is based on the social identity theory.

The Social identity approach looks at leadership in terms of how the leader is able to mobilize the followers not with the promise of financial/quantitative rewards (as would be the case with transactional/power leadership style), rather the leader seeks to unite and mobilize the efforts of followers by appealing to their reasoning and emotions (affective), and this in itself translates to intrinsic motivation for the followers (employees). The social identity theory (Tajfel, 1982) provides a highly wholistic conceptual approach to assessing leadership, its influence, and how it is perceived, all in relation to group goals. The theory has it that individuals derive a sense of identity from their group memberships as well as a sense of self-esteem (Tajfel & Turner, 1985). Social identity as a theorical approach to leadership is founded upon the fact that as individuals categorise themselves into groups and identify with these groups as a means of developing their self-concept and protecting/improving their self-esteem, they therefore seek fellow members of the group who embody the values of the group (identity prototypicality), who crafts a sense of commonality amongst the group members (identity entrepreneurship), who seeks to promote the interests of the group (identity advancement) and who will make the group special and relevant to non-members (identity impresarioship). All of these have been extensively assessed by Steffens et al. (2014).

By the social identity approach, leadership is therefore "a recursive, multi-dimensional process that centres on leaders' capacities to represent, advance, create, and embed a shared sense of social identity for group members" (Steffens et al., 2014, p. 1002). Therefore, by this approach, it would make sense that a leader would want to be seen as being representative of the group and its values, as being able to unite the members of the group, as seeking the advancement of the group's interest, and as making the

group relevant to their immediate and non-immediate environment. When a leader is able to be seen in these glorious lights, his/her influence over the group is likely to be more than when this is not the case.

Rather than using classic theories about leadership styles e.g. transformational/transactional leadership to analyse the variable here, we use the relatively more contemporary and less investigated social identity approach to leadership, which has dimensions that are more relevant for the present time and contains features that are ascribed to some of these aforementioned classic leadership styles. E.g. the identity prototypicality, entrepreneurship, and advancement components are somewhat sine qua non for some so called leadership characteristics such as charisma, trust (of followers), etc.

Leadership has been found to have an influence on product design in as much as creativity and innovation is concerned (Jaiswal & Dhar, 2015; Makri & Scandura, 2010; Ryan & Tipu, 2013; Vargas, 2015; Oke, Munshi, & Walumbwa, 2009), and has been found to influence workplace cohesiveness (Pillai & Williams, 2003) – the opposite of workplace conflict which has been found to relate with employee job satisfaction, organizational commitment, and turnover intentions (Frone, 2000), and these could have an influence on company information safety (see Posey, Roberts, & Lowry, 2015). Overall, as the mediators of this study are possible influencers of the dependent variables, and leadership has been found to influence these mediators, there is thus possibility that leadership influences the DVs directly and/or indirectly.

MEDIATORS

The variables of workplace conflict, perceived organisational support for creativity, co-worker helping and support, and useful feedback from co-workers (workplace factors) as well as organisational commitment, job satisfaction, and turnover intentions (employee factors) will each be assessed as having mediating influences over the relationship between leadership (IV), product design and company information safety (DVs).

Conflict according to Thomas (1992), is a process that begins with the perception of one party that another is frustrating or will frustrate their concerns. He illustrated a sequence of events; frustration, conceptualization, behaviour, outcome. He proposed that conflict begins at the conceptualization stage (cognitive) as the way people perceive their frustrations as well its cause, which can be significantly different, and this perception inevitably determines their behaviour. Interpersonal conflict in the workplace may range from minor disagreements to physical assaults and can be between co-workers or between leaders (supervisors) and employees (Frone, 2000). The conflict may be overt (e.g., being rude to a co-worker) or may be covert (e.g., spreading rumours about a co-worker). Conflict in the workplace can have serious consequences on employees commitment to the firm, their physical and psychological well-being, and their individual-level performance, all of which potentially affects the firm's product design and innovation, its performance, and its information security (De Dreu, 2008; Gregory, 1983; Posey, Roberts, & Lowry, 2015; Spector & Jex, 1998; Szulanski, 1996).

In addition to workplace conflict, perceived organisational support for creativity, co-worker helping and support, and useful feedback from co-workers, are all variables that will be considered as workplace factors (mediators of the influence of leadership on product design and company safety). Perceived organisational support for creativity which is "the extent to which an employee perceives that the organization encourages, respects, rewards, and recognizes employees who exhibit creativity" (Zhou & George, 2001, p. 686), is a highly relevant variable in this study as it strongly influences employee creativity (Amabile, 1988; Amabile, Conti, Coon, Lazenby, Herron, 1996), especially considering the example of Google's 20% time rule discussed in the introduction of this paper. Zhou and George (2001) described perceived organisational support for creativity, co-worker helping and support, and useful feedback from co-workers as "favourable contextual conditions" (p. 692) that determine employee creativity even when these employees are dissatisfied with their jobs (job dissatisfaction) but still want

to continue working for the company (opposite of turnover intentions) – often as a result of necessity (continuance commitment).

Meanwhile, employee commitment, job satisfaction, and turnover intentions which otherwise will collectively be termed "employee factors" (as opposed to workplace factors), are also very relevant to this study. Employee commitment has been found to have a positive influence on employee intention to protect company safety (Posey, Roberts, & Lowry, 2015), thus if employees have the intention to protect company information safety, they can't also concurrently have the intention to compromise it. Job satisfaction and turnover intentions (or the opposites thereof) have also been found to influence employee creativity (under favourable conditions; Zhou & George, 2001) and compliance with organisational ethical standards which would no doubt include the protection of company information safety (Schwartz, 2001).

Studies have shown intertwining influences between the variables that constitute workplace factors and employee factors (Frone, 2000; Haq, 2011; Ndahiro, 2018), and between these and the IV (leadership) and DVs (product design and company safety). For example; De Dreu (2008) qualitatively assessed the claim of workplace conflict as having detrimental and/or beneficial consequences depending on its management. He expressed his disbelief in positive conflict, stating that workplace conflict can only under very stringent circumstances have a few positive consequences, and even then, negative consequences (more or less) abound. However, he did cite the fact that workplace conflict is potentially essential for organisational innovation, adaptation, and survival, but questioned whether these couldn't be achieved via means other than workplace conflict. Overall, he was pessimistic about the so-called benefits that workplace conflict could have in an organisation and instead promoted conflict management as a means of reducing or avoiding the negative consequences of conflict rather than seeking to harness its so-called benefits. Most studies have only analysed a few of the variables of concern in this study as part or as a whole in relation to other variables not contained within the scope of this present study (e.g. customer interaction toward products). However, this study will be one of the first to consider the influence of leadership on product design and company safety, with workplace and employee factors being considered as mediators of said influence.`

Different researchers have diverse opinions as some view product design as being influenced by factors such as work group diversity and group processes (e.g. knowledge sharing and team conflict), employees brainstorming sessions, workplace culture, etc (Bai, Lin, &Li, 2016; Sutton & Hargadon, 1996; West, 2002). Meanwhile, some researchers view company information safety as being influenced by factors such as employee personality and attitude, organizational commitment, organizational ethics, rules and protective strategies, and the firm's partnering relationships with other firms (Frone, 2000; Mohr, 1996; Pillai & Williams, 2004; Posey, Roberts, & Lowry, 2015; Shropshire, Warkentin, & Sharma, 2015). Even though these researchers have studied different variables as exerting influence on product design and company safety, they all congruently agree that both variables are indispensable to the growth and maintenance of competitive advantage for organizations.

There have been several studies to consider each of the key variables (leadership, product design, and company safety) and mediators that are being considered in this study, and some have even considered two of these key variables in a single study, but one that considers all three in the manner as is in this study, there is none.

In this present age of rapid innovation and fierce competition, industries are experiencing what Fazzini (2018) called "a booming job market for corporate insiders willing to share secret info with cyber criminals", especially with the dark web becoming more mainstream. In the wake of these new developments, as well as the ever present competition among similar companies to outdo one another in the design of their product, it is therefore necessary to investigate the possibly influential factors over the variables of product design and company information safety, so as to provide empirical knowledge

about the variables under study, as well give informed recommendations about how companies can improve on both variables.

It is believed that the results of this study will provide much needed insight into the relationships between all three variables and what relationship they share, but more importantly this study will provide a wider and slightly unconventional perspective from which to analyse the inner workings of companies involved in product design - in a general sense. A wider perspective in that the variables of product design and company safety are not just individually assessed as being influenced by one or more variables as is the case in most studies, but these variables are being assessed individually and jointly as being influenced by leadership and other mediators such as workplace conflict, employee commitment, job satisfaction, and turnover intentions. An unconventional perspective in that product design and company information safety in this study is not being assessed by external information sources such as user ratings or by how many reported cases of information fraud a company has. Rather, they are being assessed by the perception of the company's employees who are insiders. Hence, this research is relevant for this present time as it is novel in its scope.

Conceptual Framework
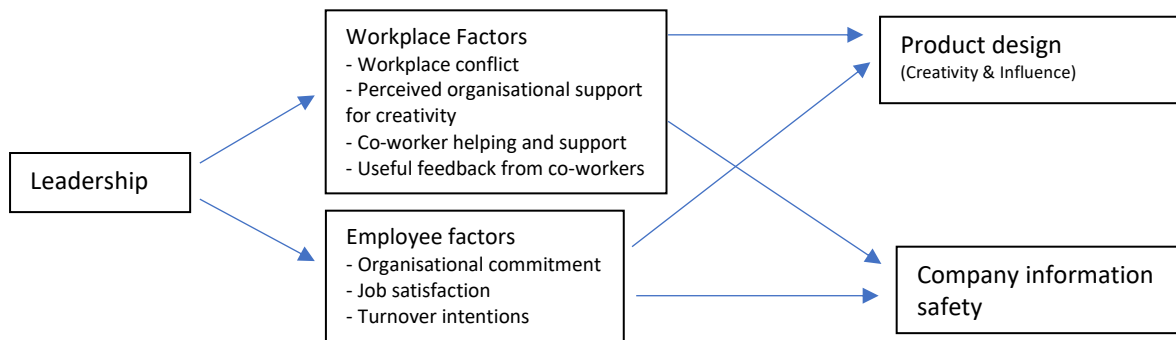
Based on literature review so far, it is believed that optimal identity leadership will have a positive influence on product design and company information safety when there is low workplace conflict and low/non-existent turnover intentions (continuance commitment) and high perceived organisational support for creativity, co-worker helping and support, useful feedback from co-workers, organisational commitment, and job satisfaction.

METHOD

PROCEDURE AND DESIGN

Data was collected via means of an online survey questionnaire that was distributed by the organisation to its employees involved in the design of the company's product(s). Firstly, an introductory presentation was given to the company staff in order to provide some information on the research (whilst avoiding information that could influence potential responses), and to seek the employees voluntary informed consent, duly informing them of their right to withdraw from the study at any point in time. This was also duly expressed within the introductory and concluding parts of the questionnaire with the option to have one's responses discarded even after completing the questionnaire. These measures to stress right to withdraw were taken in light of the sensitive nature of the study as it relates to company information safety.

Next, a link was created that leads to a version of the online questionnaire specifically for the company in question (Company A and Company B). This way, the researcher was able to keep track of which data came from the employees of which company. This link is then distributed internally to all the relevant employees by a HR personnel (in company A) or by the Team leader (in company B). By clicking on the link, employees were directed to the online questionnaire and were able to then enter their responses to the question. Both data from company A and B were merged together and analysed for the purpose of this study.

PARTICIPANTS

In order to recruit participants, the researcher sought the consent of various companies that engage in product design, in order to conduct the research with their employees (who design their products), with the promise of providing them with the research results, implications, and recommendations on ways to improve, of course omitting demographic and otherwise identifying information. Most of these companies operate within operating within the Twente region, more so within the cities of Enschede and Hengelo. Of the over 20 companies approached, only two gave their consent for the research to be conducted with their design employees. These companies will be referred to as company A and Company B. Company A is primarily involved in chemical engineering (among other things) and Company B in Computer software engineering (among other things).

In company A, 39 (out of a population of 51) responses were collected, of which only 32 were usable after excluding all the responses where the participant asked that his/her responses be discarded or where the participant did not fill in more than demographics. In company B, 22 (out of a population of 22) responses were collected, of which only 18 were usable after excluding all the responses where the participant asked that his/her responses be discarded or where the participant did not fill in more than demographics. Put together, this study had a total of 50 usable participant responses, and of these 50, 80 percent (40 participants) identified as male, 10 percent as female, and the final 10 percent chose the option of "I'd rather not say". Participants ages ranged from 25 or younger to 65, whereby the majority (34%) were between the ages of 36-45. Participant's educational attainments ranged from "Higher Vocational Training" to "University or Professional Doctorate", with the majority of participants having either a University bachelors or equivalent (32%) or a University masters or equivalent (30%).

MEASURES AND TOOLS

Leadership was assessed using the identity leadership inventory (ILI) by Steffens et al. (2014), which has 15 items and a reliability α of .95. Example of items include; "This leader is a model member of [the group]", "This leader creates a sense of cohesion within [the group]", etc. This and every other scale in this study were scored on a 5-point Likert.

Product design was assessed using the items that measure intrinsic motivation from the motivation at work scale (MAWS) by Gagne et al. (2010) combined with structured direct questions aimed at gauging perceived creativity and control over the product design process and outcome. The scale put together consists of 9 items and had a reliability α of .77. Examples of items include; "I truly believe that I influence the designs of products produced by my company", "I feel that I do not really have a say in the designs of product by my company – (the only reverse scored item)", etc.

Company information safety was assessed using structured indirect questions to determine likelihood for employees to compromise the information safety of their company. The scale consists of 7 items, 3 of which are reverse-scored and had a reliability α of .75. Examples of items include; "My company should probably do more to prevent employees from accidentally divulging sensitive company information in a social setting", "I believe that the risk of sensitive company information being leaked is negligible", etc.

Workplace conflict was assessed using the interpersonal conflict at work scale (ICAWS) by Spector and Jex (1998), which has 4 items and a reliability α of .61 but one item was removed to improve reliability to α of .77. the item removed was "I often get into arguments with others at work." Examples of items include; "Other people often yell at me at work", "Other people are often rude to me at work", etc.

Perceived organisational support for creativity (α of .82), Co-worker helping and support (α of .79), and Useful feedback from co-workers (α of .64), were assessed using the corresponding items in Zhou and George (2001), having 4, 4, and 3 items respectively. Examples of items respectively include; "Creativity is encouraged at my company", "Co-workers willingly share their expertise with each other", "I find the feedback I receive from my co-workers very useful", etc.

Job satisfaction was assessed using the facet-free job satisfaction scale by Quinn and Stanines (1979). The scale has 5 items and a reliability α of .83. Examples of items include; "If I were free to go into any type of job I wanted, I would want the job I now have", "All in all, how satisfied would you say you are with your job?", etc.

Organisational commitment, which comprised of organisational identification, involvement, and loyalty subscales, was assessed by the corresponding items in Cook and Wall (1980). The scale has 9 items and a reliability α of .72. Examples of items include; "I am quite proud to be able to tell people who it is I work for", "I feel myself to be part of the company", etc.

Turnover intentions was assessed using the turnover intentions scale (TIS-6) as developed by Roodt (2004) and more recently validated by Bothma and Roodt (2013). The scale has 6 items, with a reliability α of .82. Examples of items include; "How often have you considered leaving your job?", "How often do you dream about getting another job that will better suit your personal needs?", etc.

All the scales were combined together into a single online questionnaire, hosted on the Qualtrics platform. Scale labels varied, hence; see Appendix for the full questionnaire having the information on labels, and indicating items which were reverse-scored.

Table 4.1: Pearson correlations of all variables in this study

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	2.84	1.09	1														
2. Gender	1.30	0.65	-.22	1													
3. Education	4.58	1.01	.01	.35*	1												
4. Experience	1.88	1.34	.58**	-.08	-.09	1											
5. Lead/follow	1.80	0.40	-.07	-.08	-.01	.07	1										
6. Leadership	3.29	0.74	.05	-.08	-.06	-.04	.01	1									
7. Product Design	3.59	0.49	.02	-.08	.08	.27	-.18	.24	1								
8. Workplace conflict	1.79	0.69	-.04	.42**	.16	-.07	.02	-.06	-.25	1							
9. Organisational support for creativity	2.89	0.76	-.11	.03	.11	-.09	-.04	.51**	.35*	-.06	1						
10. Co-worker helping & support	3.32	0.65	.04	-.36*	-.34*	-.06	.05	.19	.31*	-.41**	.37*	1					
11. Useful feedback	3.37	0.64	-.03	.03	-.14	.04	.03	.40**	.32*	-.15	.43**	.66**	1				
12. Organisational Commitment	3.51	0.45	.08	-.09	.17	.03	-.14	.20	.53**	-.15	.61**	.32*	.19	1			
13. Turnover Intentions	2.42	0.69	-.09	.09	-.00	-.09	-.01	-.41**	-.50**	.25	-.59**	-.40**	-.37*	-.76**	1		
14. Job Satisfaction	3.44	0.74	.13	-.10	.08	.23	-.04	.41**	.69**	-.32*	.56**	.30*	.32*	.76**	-.82**	1	
15. Company Information Safety	3.21	0.57	-.17	.12	-.04	-.08	-.22	.06	.11	-.26	.14	.01	-.01	.17	-.28	.26	1

Note $p < .01$**; $p < .05$*, N=50.

All items were scored on a five point Likert scale.

In Table 4.1, it can firstly be seen that the independent variable of Leadership does not significantly correlate with the dependent variables of Product design and Company information safety. This thus means that Leadership does not have a significant direct relationship with Product design nor Company information safety. However, it can also be seen that Leadership has positively significant relationships with the variables of Perceived organisational support for creativity ($r = .51^{**}$, $p < .01$), Useful feedback from co-workers ($r = .40^{**}$, $P < .01$), and Job satisfaction ($r = .41^{**}$, $p < .01$). Leadership also has a significant negative relationship with the variable of Turnover intentions ($r = -.41^{**}$, $p < .01$).

Looking at the dependent variables of Product design and Company information safety, it can be noted that Company information safety does not have a significant relationship with any of the variables under study, including the demographic variables. With Product design on the other hand, it can be seen that Perceived organisational support for creativity ($r = .35^*$, $p < .05$), Co-worker helping and support ($r = .31^*$, $p < .05$), Useful feedback from co-workers ($r = .32^*$, $p < .05$), Organisational commitment ($r = .53^{**}$, $p < .01$), and Job satisfaction ($r = .69^{**}$, $p < .01$), all significantly and positively correlate with Product design. Whilst Turnover intentions significantly has a negative correlation with Product design ($r = -.50^{**}$, $p < .01$).

It is also worth noting that the demographic variable of Gender significantly correlates positively with education level ($r = .35^*$, $p < .05$), and Workplace conflict ($r = .42^{**}$, $p < .01$), and negatively with Co-worker helping and support ($r = -.36^*$, $p < .05$). This means that from the sample, females (compared to males) tend to have higher educational qualifications, tend to experience more conflict at work .
Also, the demographic variable of education level has a significant negative relationship with Co-worker helping and support ($r = .34^*$, $p < .05$). This means that those with higher (compared to those with lower) educational attainment tend to experience/perceive less help and support from their co-workers, and this again can be traced back to females having higher educational attainments. So the question could be; do people with higher educational attainments receive less co-worker helping and support or do 'females' with higher educational attainments receive less co-worker helping and support, or is it a mixture of both? To answer these questions, a two-way between-groups analysis of variance was conducted using gender and educational attainments as independent variables and co-worker helping and support as the dependent variable (see Pallant, 2007, for reasons why the two-way ANOVA was suitable for this analysis). The results showed that gender ($F_{(2,38)} = 1.18$, $p = .32$, $\eta2 = .06$) and educational attainments ($F_{(3,38)} = 1.23$, $p = .31$, $\eta2 = .09$) do not have a significant main effect nor an interaction effect ($F_{(4,38)} = 1.98$, $p = .12$, $\eta2 = .17$) on co-worker helping and support.

Moving further, several Linear regression analysis were conducted. First, to determine the influence of Leadership on the proposed mediators, which are; Workplace conflict, Perceived organisational support for creativity, Co-worker helping and support, Useful feedback from co-workers, Organisational commitment, Job satisfaction, and Turnover intentions. Then, Linear regression analyses were conducted in order to determine the influence of the proposed mediators on the dependent variables of product design and company information safety.

The first round of regression analyses, using Leadership as the predictor showed the following significant results; Leadership predicts Perceived organisational support for creativity [$F_{(1, 46)} = 16.31$, $p = .00$], explaining 24.6 percent of the variability. Leadership also predicts Useful feedback from co-workers [$F_{(1, 46)} = 8.72$, $p = .01$], explaining 14.1 percent of the variability. Leadership also predicts Turnover intentions [$F_{(1, 43)} = 8.63$, $p = .01$], explaining 14.8 percent of the variability (with a standardised Beta of -.409 and t of -2.938). Leadership also predicts Job satisfaction [$F_{(1, 43)} = 8.50$, $p = .01$], explaining 14.6 percent of the variability. Regression analysis showed that Leadership did not predict Workplace conflict, Co-worker helping and support, and Organisational commitment. It also showed that Leadership did not directly predict Product design, and Company information safety. All variability explained are based on the Adjusted R square. Table 4.2 presents the results from the first round of regression analyses.

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Table 4.2: Results of Regression analyses where Leadership is the Independent variable and the proposed mediators are the Dependent variables

Dependent variables	N	β	t	p
Workplace conflict	47	-.06	-0.43	.67
Perceived organisational support for creativity	47	.51**	4.04	.00
Co-worker helping & support	47	.19	1.29	.21
Useful feedback from co-workers	47	.40**	2.95	.01
Organisational Commitment	47	.20	1.39	.17
Turnover Intentions	44	-.41**	-2.94	.01
Job Satisfaction	44	.41**	2.92	.01

Note $p < .01$**; $p < .05$*

The second round of regression analyses was conducted using leadership and only the predictors that were shown to be influenced by leadership in the previous round of regression analyses, and the results showed that the mediating variables of Perceived organisational support for creativity, Useful feedback from co-workers, Job satisfaction, and Turnover intentions put together, significantly predicted Product Design [$F(5, 39) = 7.98$, $p = .00$], explaining 44.2 percent of the variability (based on the adjusted R square). However, none of the mediators put together significantly predicted Company Information Safety [$F(5, 38) = 0.81$, $p = .55$]. Although, only marginally significant, individual linear regression analysis of Turnover intentions [$F(1, 42) = 3.56$, $p = .07$] (with β of -.28) and Job satisfaction [$F(1, 42) = 3.06$, $p = .09$] showed that they individually influenced company information safety. Table 4.3 presents the results below.

Table 4.3: Results of Regression analyses of the proposed mediators on the Dependent variables

Dependent variable	Predictor	β	t	p
Product design	Leadership	.03	0.19	.85
	Perceived organisational support for creativity	-.10	-0.61	.55
	Useful feedback from co-workers	.08	0.62	.54
	Turnover Intentions	.21	1.01	.32
	Job Satisfaction	.89**	4.38	.00
Company information safety	Leadership	-.04	-0.22	.83
	Perceived organisational support for creativity	-.00	-0.01	.99
	Useful feedback from co-workers	-.11	-0.65	.52
	Turnover Intentions	-.25	-0.88	.38

|				
Job Satisfaction		.11	0.40	.69

Note p < .01**; p < .05*

From the table above it can also be noted that whilst the collective model of leadership and the other predictors (mediators) predicting product design is statistically significant, the individual predictors are not significant, with the exception of job satisfaction which is significant at p=.00.

Furthermore, using an interactive online calculation tool (Preacher & Leonardelli, 2001), the Sobel test was conducted as an additional layer of confirmation for the mediation relationships that was shown by the regression analyses. The test supported the following mediation relationships; Leadership, Turnover intentions, and Product design (with a Sobel Z of 5.72 and a p-value of .00). Leadership, Useful feedback from co-workers, and Product design (with a Sobel Z of 3.96 and a p-value of .00). Leadership, Perceived organisational support for creativity, and Product design (with a Sobel Z of 2.21 and a p-value of .03). Leadership, Job satisfaction, and Product design (with a Sobel Z of 3.28 and a p-value of .00). Leadership, Turnover intentions, and Company information safety (with a Sobel Z of 4.78 and a p-value of .00). Leadership, Job satisfaction, and Company information safety (with a Sobel Z of 3.09 and a p-value of .00). Table 4.4 presents the results below.

Table 4.4: Results of Sobel test to confirm the mediating relationship between the independent and dependent variables.

Independent variable	Mediating variables	Dependent variables	Z	p
Leadership	Perceived organisational support for creativity	Product design	2.21	.03
Leadership	Useful feedback from co-workers	Product design	3.96	.00
Leadership	Turnover Intentions	Product design	5.72	.00
Leadership	Job Satisfaction	Product design	3.28	.00
Leadership	Turnover Intentions	Company information safety	4.78	.00
Leadership	Job Satisfaction	Company information safety	3.09	.00

Therefore, the supported conceptual framework is:
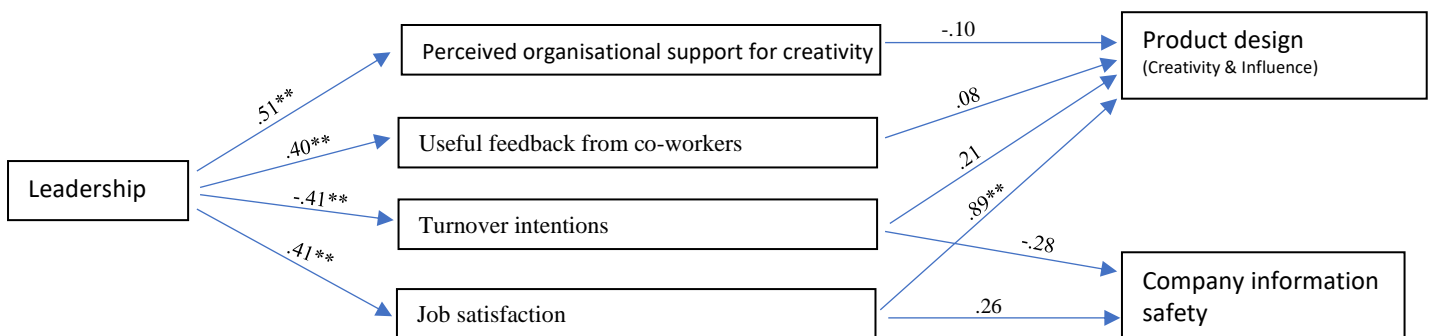
DISCUSSION

The present research was founded upon the perceived need to correct for the shortcomings of most studies within the subject domain of this present research, which is the influence of leadership on product design and company information safety. As most studies have previously assessed the variables of concern individually and sometimes in relation to one or a few others, there have been varying ascriptions of influence between the different variables of concern. Hence, the present study sought to assess all the variables of concern together within the context of one single study, and thus provide more inclusive and comprehensive results and observations.

Furthermore, the present study sought to assess the variable of product design and the threat to company information safety, not by the conventional (albeit logical) means of assessing using the perspective of the consumers (for product design) or from the focus of external security threats (for company information safety), both of which being an "outsider" approach, but rather assessing via the perspectives of the employees who are insiders and are responsible for what the customer later on experiences (in the form of products, in this case) and to a large extent the safety of the company's sensitive information.

The results from the correlational and regression analyses showed that identity leadership does not directly influence product design (the creativity and control employees perceive they have over the design process and outcome) nor company information safety – the likelihood of employees to protect or compromise the company's sensitive information, but does so indirectly. In relation to the question of "how is this influence mediated by workplace and employee factors", the results from the correlational and regression analyses, as well as the Sobel test show that leadership exerts positive influence on product design via the mediating variables of organisational support for creativity, useful feedback from co-workers, and job satisfaction, and exerts negative influence via the mediating variable of turnover intentions. In more practical terms, when employees have a positive perception of their leaders as identity leaders, this positively influences their perception of the organisation's support for creativity, the usefulness of feedback from co-workers, and their satisfaction with their jobs. These in turn positively influences their perception of the amount of creativity and control that they have over the product design process and outcome. The opposite is true when employees have a negative perception of their leaders as identity leaders.

The depicted relationship could be due to a number of reasons, e.g. because employees perceive positive identity leadership from their leaders, they could have develop a strong in-group identification and thus value the feedback of other employees more and not necessarily that the feedback is any more or less useful. The same could be said for organisation's support for creativity and job satisfaction, as a positive identity leader could also be seen as making an organisation more supportive of creativity just by virtue of their ideas of what organisational support is aligns with the leader's idea of what organisational support is. For job satisfaction, it most likely is that due to the positive identity leader, the followers (employees) are able to fulfil not just professional (physiological & safety) needs for a source of income and relative job safety, but also other higher (love & belongingness, & esteem needs, possibly even self-actualisation) needs (Maslow, 1954). Hence, more (higher) needs being met makes employees more satisfied with their jobs. Findings by Staelens, Louche, and D'Haese (2014) partly supports this explanation.

In essence, when positive identity leadership exists in an organisation, employees will tend to perceive that the organisation is supportive of creativity, that the feedback from their co-workers are useful, will tend to be satisfied with their jobs and have little to no intention of leaving the organisation, ultimately culminating in employees perceiving that they are allowed a good amount of creativity and control in designing products for their companies – which we have previously established to be a good thing, with examples of companies such as Google.

Looking back at the results as they relate to the variable of company information safety, it was discovered that via the regression analyses conducted, none of the mediators has a statistically significant predictive influence over the variable of company information safety. However, upon closer inspection of the influence of the individual mediators on the variable of company information safety, it was discovered that Leadership did exert a marginally significant influence on company information safety via the mediating variables of Turnover intentions (negative influence) and Job satisfaction (positive influence). Putting this into perspective, employees perceive positive identity leadership, they experience less intention of leaving their company, they are more satisfied with their jobs, and this culminates in them perceiving that they are more likely protect their company's information safety.

One reason why Company information safety may not have had statistically significant relationships via the correlation and regression analysis could be found in the tendency for employees to underestimate the threat levels faced by the company, hence the need advocated by Workman, Bommer, and Straub (2008) for Chief Security Officers to communicate the actual levels of threat the company faces. Individuals are not able to maintain high levels of alert over long periods of time without some form of constant reminder of the existence of imminent threats, as there is strong tendency to settle in some form of normalcy and become oblivious of existent threats.

It is worth noting that the results of this study are based on the perceptions of the employees (participants), and not on observations of the researcher. Due to this fact, and the overall nature of the study, no cause and effect statements can nor were made with the results of the study. Establishing causation was never the aim of the present study, rather investigating the influences of the variables of concern and how they relate to one another was, and in this regard the study's aim was achieved. The key focus of the study being "how the variables of interest relate to one another", refers not necessarily to one variable bringing about another (because that would be causation), but merely to the fact that the presence and quality (positive or negative) of one variable usually signifies the most likely presence and quality of the other variable(s).

As an addition to the main results, it was also found that gender and educational achievements correlated negatively with co-worker helping and support, thereby indicating that females, and employees with higher educational qualifications perceived that they received less co-worker helping and support. This result was in itself interesting, and was more so as it birthed the question of whether the perception of co-worker helping and support among employees with higher educational qualifications differed as a consequence of gender. Further analysis conducted along this line of inquiry showed that this was not the case as both male and female employees at all educational levels did not differ enough in their perception of co-worker helping and support to achieve statistical significance.

LIMITATIONS AND RECOMMENDATIONS

In reflecting upon the limitations of this study, with the aim of deriving recommendations for future research, we must first address the issue of sample size. With a sample size of 73 participants from both companies that participated and a response rate of 68.5 %, thereby providing 50 eligible responses, it is perhaps tempting, based upon conventional expectations of what sample sizes should be in order to attain low error margins (Niles, n.d.), to view this study as having a low amount of participants and weak generalizability. Whilst this might indeed be the case, especially if one was trying to generalise this study's results to 'organisations' in general (which is not the case in this research), it is perhaps even more important to focus of the 'why' the sample size is the way it is in this study, how this might have affected the results, and how this can inform future research.

As concerning the response rate of this present study (68.5%), similar studies show that the response rate is actually very normal. E.g. Workman, Bommer, and Straub (2008) although having a total of 588 usable responses, their rate of response was 69%. Zhou and George (2001) had a total of 142 participants, with a response rate of 74.5%. Whilst response rate can be seen to be within normal bounds,

the factors possibly responsible for the overly low number (as some might believe) of responses still needs to be assessed. In assessing this, one must first consider the specifications for participation in this study, which was that only organisations involved in the design of a product(s) could participate, and only the employees involved in that process of product design could participate. This essentially excluded a great number of organisations, and an even greater amount of employees within organisations that were eligible. Also, securing the approval of eligible organisations to conduct the research with their employees proved extremely difficult, and more so due to the company information safety variable being studied (see Koutulic & Clark, 2004), as organisations were highly unwilling to give said approval.

With regards to the possible effect of the sample on the results, a higher sample would have no doubt been welcome, but it is more likely that composition as opposed to size may have impacted the results of this study. 80% of the study's participants self-identified as males, whilst only 10% as females, and 10% selected 'I'd rather not say'. Although, this disparity in gender distribution of employees might be an accurate reflection of real-life organisational compositions (e.g. Zhou & George, 2001, had a 73.8% male participation), it may have only influenced the results as far as the analysis to determine if gender influenced the perceived amount of co-worker helping and support. Aside from this, it is believed that the gender composition of the sample did not influence any other results.

Based on the sample recruitment experiences, it is recommended that future research in this area be carried out with much lesser time constraint than is characteristic for a Master's thesis, thereby allowing for much more time to seek company approval, keeping in mind that of 20 companies approached, maybe just 1 will offer approval. Alternatively, future research can be designed to include most if not all the employees of a company, as is the case with Workman, Bommer, and Straub (2008) and Zhou and George (2001). However, by using this method, the researcher would effectively be trading off study focus for larger participation through inclusivity. Yet another means of avoiding limited research participation, which is probably the best of all especially in investigating the sensitive variable of company information safety (and other perceptions about one's company) would be to recruit panellist as was done by Posey, Roberts, and Lowry (2015) (67% response rate). Here, they basically got participants randomly without seeking the approval of companies they work for by recruiting them as just "individuals" (who are employees of various companies) and not as "employees" of a certain company.

An actual limitation of this study could be found in its data collection method, which involved solely questionnaires. Whilst this study sought to collect data on employee perception, and did so perfectly well with questionnaires, it still is just the "perceptions" and does not contain information on the causes of those perceptions. Therefore, it is recommended that future research in this area not only look at the existing perceptions, but also try to discover the causes. In attempting to do this, it is recommended that researchers combine other data collection methods alongside survey questionnaires, e.g. longitudinal observations, interviews, etc. in so doing, future research will not only provide insight into perception but will also more concretely map how these perceptions in one employee might interact with the perceptions of other employees in the same company. Also, future research will be able to offer up concrete instances on why a certain employee's perception is different from another employee. For example, with longitudinal observations, researchers can observe the group dynamics at the workplace (thereby studying more directly, all the workplace factors in this present study) and this could be complemented by interviews which could provide insight into why the group dynamics are the way they are, as well as insight into the causes for individual employee beliefs held.

Additionally, in collecting data on the variable of company information safety, by using solely questionnaires, even with all the steps taken to ensure anonymity, it is still very much possible that participants responses were biased by social desirability, after all the results (excluding identifiable information) would be relayed back to them and their company and they might not want their company

to perceive that there is a risk that an employee in the company would compromise the safety of its sensitive information. Hence, it is recommended that in future attempts to study this variable, researchers recruit using panellists thereby freeing themselves of the obligation to report findings to anybody aside from the participants and further assuring participants that their companies would not know they participated nor would they know that they were the object of their participation. Also, if possible, complimenting data collection with psychophysiological measures such as eye-tracking, EEG, etc. could provide an additional layer of confirmation that the responses given are true and void of concealment attempts.

Finally, what is not necessarily a limitation but therein lies a recommendation is concerning the model of leadership used in this study, which is Identity leadership by Steffens et al. (2014). Whilst ILI is very much an interesting perspective of leadership that still very much deserves further investigations, it might also yield very interesting results if future research considering all these variables together (as is the case in the present study) were to assess leadership from other opposing perspectives, e.g. the transactional vs transformational perspective (Oke, Munshi, & Walumbwa, 2009) or even the creative vs operational leadership perspective (Makri & Scandura, 2009). Aside from the benefit of having opposing perspectives for comparison, these perspectives might have a more direct influence on the dependent variables (product design and company information safety) as they capture more the 'process' of the leaders' actions and less the 'outcome'. For example, transformational leverages charisma whilst transactional leverages rewards, and Oke, Munshi, and Walumbwa (2009) found that each are particularly suitable for achieving different outcomes. Transformational is best for creativity and transactional for implementation.

CONCLUSION

Summarising the findings of the present study, we saw that identity leadership (prototypicality, entrepreneurship, advancement, & impresarioship) does not directly influence the amount of creativity and control employees believe they have over the product design process and outcome of their companies, neither does it directly influence their perceived likelihood to protect/compromise the information safety of their company. However, identity leadership exerts its influence on these variables indirectly, via the mediators that are perceived organisational support for creativity and useful feedback from co-workers (both of which are considered 'workplace factors'), and job satisfaction and turnover intentions (both of which are considered 'employee factors'). Ultimately, positive identity leadership is shown to positively predict all the pre-stated mediators aside from turnover intentions which it negatively predicts. These mediators in turn positively predict product design, aside from turnover intentions which negatively predicts product design. Also, only job satisfaction and turnover intentions were found to predict company information safety, the former predicting positively and the latter, negatively.

These findings advance current theoretical knowledge on the applications of identity leadership, and has practical implications by providing leaders with empirical benefits for establishing and maintaining identity leadership in their organisations.

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