Master Thesis

Ex-ante Responsibility: A Trait Perspective

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Abstract

Responsibility is one of the most important instigators of behaviour and action in people. Nevertheless, responsibility is generally viewed as a form of accountability after an event (ex-post responsibility). It is not commonly viewed or studied as a factor of influence before an event (ex-ante responsibility). The lack of ex-ante responsibility research seems to be counterintuitive and a shortcoming in the responsibility research field. This study aimed to reduce this shortcoming through means of the development of a self-report survey on ex-ante responsibility from a trait perspective. A definition of ex-ante responsibility was first developed, which was then used to generate an item pool for the ex-ante responsibility self-report survey. The survey was validated in an expert study after which it was used to gather data from the KI&S employees (Dutch Tax Office call centre). The data were subjected to correlation, regression, and moderation analyses to investigate correlates with HEXACO personality traits and to investigate possible trait-like properties in ex-ante responsibility. Half of all possible correlations, between ex-ante responsibility and personality traits, were found to be significant. Moreover, six of the nine hypothesized relations between various HEXACO factors and the ex-ante responsibility facets were confirmed. It was concluded that ex-ante responsibility and its facets have trait-like qualities.

Keywords: Development, Self-report, Ex-ante responsibility, Responsibility facets, Personality Traits.

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Ex-ante Responsibility: A Trait Perspective

Responsibility researchers distinguish between two types of responsibility: ex-ante responsibility (i.e., responsibility taken or assigned in relation to a future event or action) and ex-post responsibility (i.e., the assigned or assumed responsibility in relation to a past event or action). Either way, most researchers assume responsibility is a cognitive process of choice, social interaction, and the foreseeable consequences (Bergsteiner et al., 2007; Vroom, 1966). However, most studies rarely explain the reason why somebody takes responsibility. Even though it is suggested that ex-ante and ex-post responsibility are inseparably linked (Bergsteiner & Avery, 2010), the focus seems to mainly lay on ex-post responsibility (Lindkvist & Llewellyn, 2003; Löfmarck, Uggla, & Lidskog, 2017). Ex-ante responsibility is rarely investigated as the main topic or a requirement for ex-post responsibility. Therefore more investigation of ex-ante responsibility would be beneficial to the general field of responsibility research (Hall, Frink, & Buckley, 2017).

However, is ex-ante responsibility a cognitive process (Bergsteiner et al., 2007; Vroom, 1966), or does it possibly have personality trait-like qualities? In proposing that ex-ant responsibility is a possible interstitial facet between the personality trait conscientiousness and other personality traits, Holdorf and Greenwald (2018) seem to suggest that ex-ante responsibility might have trait-like qualities. The relations found between responsibility and the personality traits openness to experience and extraversion underlines this suggestion (Bierhoff et al., 2005). A positive relation was also found between proactivity and responsibility (Bierhoff et al., 2005), which is not a personality trait, but an interstitial facet between various personality traits (de Vries, Wawoe, & Holtrop, 2016). Moreover, both personality traits and ex-ante responsibility were found to be important predictors of behaviour (Bernstein, 1995; Nordbye & Teigen, 2014).

Unfortunately, the number of studies which incorporate the trait perspective of ex-ante responsibility is limited (Bierhoff et al., 2005; Hall et al., 2017). In this study the trait perspective was investigated with the intention to search for trait-like qualities in ex-ante responsibility in order to lay a more substantiated basis for future trait perspective studies in the responsibility research field. To accomplish this goal, this study was set up in two stages. The first stage consisted of the development of a definition of ex-ante responsibility and the development and validation of an ex-ante responsibility self-report survey. In the second stage, data on the developed survey and personality traits (i.e., honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience) were gathered from employees of the Dutch tax authorities' customer services (KI&S). The analyses on these data focused on investigating possible relations between ex-ante responsibility and the aforementioned personality traits. These proposed relations may possibly be influenced by an urge to act (e.g., help someone in need). Therefore, proactivity (i.e. actively tackling problems) will not only be investigated for direct relationships with ex-ante responsibility, but also for possible influence on the relations between the personality traits and ex-ante responsibility.

In accordance with the two-stage set of this study, this paper will also consist of two parts. The first part consisted of an expert study, which aimed to validate the developed self-report survey. The second part (i.e., the main study) focused on the investigation of the hypothesized relations between the personality traits and ex-ante responsibility. In the general discussion, the outcomes will be discussed in the context of existing literature as well as the context of work at KI&S.

Theoretical Framework

Researchers agree that the current body of responsibility research has some fundamental limitations. On the one hand, the amount of empirical research is found to be meager (Hall et al., 2017). On the other hand, the lexicon used to describe responsibility within responsibility research is vast. However, few researchers actually differentiate between ex-ante and ex-post responsibility. Moreover, which type of responsibility is researched is often not clear from the context (Bergsteiner & Avery, 2010). Nevertheless, responsibility after an event, also known as ex-post responsibility, is the most common perspective within responsibility research (e.g. Bergsteiner & Avery, 2010; Bernstein, 1995; Lindkvist & Llewellyn, 2003). Little attention is given to the responsibility people assume before an event, which is the ex-ante perspective. Even though most terms (e.g. accountability, liability, responsibility) can be used to describe both ex-ante and ex-post responsibility (Hall et al., 2017), most researchers agree that ex-ante responsibility still lacks a clear and adequate definition (Bergsteiner & Avery, 2010; Fincham & Jaspars, 1980; Hall et al., 2017; Schlenker, Britt, Pennington, Murphy, & et al, 1994). As ex-ante responsibility seems to instigate action which leads to ex-post responsibility (Bergsteiner & Avery, 2010), the construction of a good definition of ex-ante responsibility is material to the research field of responsibility. Therefore, the following definitions were constructed.

Table 1.
Definitions Ex-ante Responsibility and Its Facets

Name	Definition
Ex-ante responsibility (ER)	The tendency to identify with a task or object and recognize the possibility of different outcomes to that task or object, so that any negative or positive consequences for the actions of the person towards realizing these outcomes are seen as consequential to their identity (i.e. hold themselves accountable).
Moral responsibility (MR)	The tendency to care for the effects of the role, task position, and consequences on the general environment in a social, cultural and/or biological context (i.e. organization at large, global perspective, the environment).
Social responsibility (SR)	The tendency to need to reduce conflicts, foster social cohesion and care for the general social well-being between all people involved in a social group that one has socially identified with (e.g. family, co-workers, group of friends).

Name	Definition
Task responsibility (TR)	The tendency to take tasks and positional obligations upon oneself in the context of the rules and regulations that are directly attached to these tasks, and position (e.g. managing a project, caring for an object).

For the construction of the definitions of ex-ante responsibility and its facets, some assumptions were made. Firstly, ex-ante responsibility has three facets. Secondly, the three facets are moral, social, and task responsibility. These facets guide the direction of a person's ex-ante responsibility, which will lead to actions. Thirdly, ex-ante responsibility and its facets have personality trait-like qualities. These assumptions and the definitions that arose from them were derived from the literature review, which, due to the ambiguity in many studies, encompassed both ex-ante and ex-post responsibility studies, as well as studies with related topics such as ethics, philosophy, personality traits, education, and leadership. The breadth of literature research is due to the versatile use of the term responsibility, as well as the number of phrases (e.g. decision making, choice, obligation, and reliance) that seem to imply or refer to the responsibility construct (Voegtlin, 2016).

The existing research field of responsibility stems from research fields such as judgement, choice, and decision making (Fincham & Jaspars, 1980; Schwartz & David, 1976; Shaver & Drown, 1986; Tetlock, 1985; Vroom, 1966). It was stated that decisions can only be made by people who are informed, sensitive, and rational (Edwards, 1954). Fincham et al. (1980) used similar wording in their description of being responsible as the capability of reasonable conduct. This seems to indicate ex-ante responsibility as one of the most important factors of influence on human conduct (Hall et al., 2017). Even though few responsibility studies specify an ex-ante or ex-post perspective, most researchers agree that ex-ante responsibility and ex-post responsibility are inseparably linked to one another (Bergsteiner et al., 2007; Bergsteiner & Avery, 2010; Finkelstien, 2009; Holdorf & Greenwald, 2018). This inseparable link was found to be very adequately formulated by Bergsteiner and Avery (2010) who stated that "accountability in the absence of responsibility makes no sense; responsibility without subsequent accountability would engender dysfunctional outcomes" (p. 9). In addition, the descriptions of ex-ante responsibility found generally described a commitment or identification with certain desired results through future actions (Bierhoff et al., 2005; Birnbacher, 2001; Fuller et al., 2006; Hall et al., 2017). For this reason, the connection between ex-ante and ex-post responsibility was incorporated in the definition of ex-ante responsibility (see Table 1.).

Ex-ante Responsibility and Personality Traits

Mostly responsibility is assumed to be an influential cognitive process which influences behaviour or is in itself a behaviour which is susceptible to judgement (Fuller et al., 2006; Nordbye & Teigen, 2014; Pellizzoni, 2004). Contrasting these general assumptions is the personality trait (i.e., a distinguishing quality of a person) perspective. The trait perspective has slowly been developing

within the ex-ante responsibility research field for decades. As early as the seventies responsibility was suggested to be a personality variable which influences behaviour (Schwartz & David, 1976). In the eighties, ego strength was suggested to be one of the personality characteristics which might influence moral ethical decision-making (Trevino, 1986). Moreover, between personality, and responsibility research overlap in the used vocabulary was found. Conscientiousness, proactive, openness to change, anger, and anxiety are a few of the which are commonly used in both responsibility and personality research (Ariza-Montes, Arjona-Fuentes, Han, & Law, 2017; de Vries et al., 2016; Fuller et al., 2006; Hall et al., 2017; Holdorf & Greenwald, 2018). For example, it was stated that a proactive personality reflects a readiness to assume responsibility (Fuller et al., 2006). Furthermore, Holdorf & Greenwald (2018) suggested that the personality trait conscientiousness overlaps with responsibility and stated that their participants provided evidence that responsibility is 'trait like'. Moreover, in their proposed taxonomy of responsibility, they suggested that internalized responsibility should be considered prospective and that takes on trait-like characteristics.

Even though it is stated in the review by Hall et al. (2017) that no empirical research was found which evaluated the Big Five personality traits as antecedents of ex-ante responsibility, there were a few studies found which took the trait perspective. The 'Big Five' which consists of the five personality traits; openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, was used in a study by Bierhoff (2005). Finding links between responsibility, openness to experience, conscientiousness, and extraversion, Bierhoff (2005) stated that more research had to be done to further investigate possible connections between personality traits and responsibility. In addition to Bierhoff, the suggestion that more research should be done into personality and responsibility was also put forward by Kohns and Ponton (2006). Their suggestion was specifically for a self-report instrument, with three dimensions to measure responsibility in self-directed learning. The lack of research which combines responsibility with personality traits was also grounds for Hall et al. (2017) to encourage researchers to investigate this underexposed area.

The limited amount of existing research relating personality traits to ex-ante responsibility led to investigating the extent to which responsibility might have trait-like qualities. Two personality trait inventories were found to be commonly used in research; the Big Five personality inventory and the HEXACO personality inventory. Even though showing similarities, the HEXACO inventory does not entail neuroticism and has two additional traits (i.e., honesty-humility and emotionality). Moreover, the description of the corresponding traits is not completely the same. The HEXACO personality inventory was found to be the best choice for this study. Especially as the interstitial facet proactivity has recently been suggested to be an engagement facet (de Vries et al., 2016), spanning three HEXACO factors which are associated with engagement (i.e. conscientiousness, extraversion and openness to experience). Moreover, as proactivity was found to be a recurring phrase in responsibility research, the HEXACO inventory, including the interstitial facet proactivity was used for this study.

The list of HEXACO inventory survey items can be found in appendix 2. The trait perspective in this study has been the cause of the trait-like quality in the formulation of the definitions of ex-ante responsibility and its facets.

The three facets of ex-ante responsibility

Researchers seemed to agree is that responsibility is a complex construct, which is influenced by many factors (Brown, Trevio, & Harrison, 2005; Derue & Ashford, 2016; Fuller et al., 2006; Holdorf & Greenwald, 2018; Löfmarck et al., 2017). These factors were, broadly speaking, divided into internal (e.g., self-imposed personal convictions or abilities) and external factors (e.g., rules and regulations imposed by others) (Bergsteiner & Avery, 2010; Birnbacher, 2001; Hall et al., 2017; Nordbye & Teigen, 2014). A wide variety of terms (e.g. rules, morals, risk assessment, and social connections) found to be ambiguous with regards to their internal or external nature (Bergsteiner et al., 2007; Birnbacher, 2001; Holdorf & Greenwald, 2018; Tetlock, 1985). Regardless of their internal or external nature, the most commonly used phrases were social relatedness, moral obligation, and task/role identity. These were for this reason investigated as possible facets of ex-ante responsibility.

Social responsibility. The position of a person within a social group (e.g. family, work team, sports group) and the expectations of that group, was found to be the most recurrent theme in responsibility research and could, therefore, be viewed as a facet of ex-ante responsibility. Holdorf and Greenwald (2018) called the social position of a person within a group, moral responsibility, which they describe as having concerns for others as well as a sense of obligation and accountability to others. However, where similar descriptions were found, they were more commonly used to describe role responsibility (Bergsteiner & Avery, 2010; Fincham & Jaspars, 1980; Hall et al., 2017). This role responsibility was generally described as the shared expectations and obligations that arise from group membership (Nordbye & Teigen, 2014). Finding similar descriptions of two rather different terms underlines the need for an unambiguous definition of the responsibility arising from a social position.

It was suggested by Birnbacher (2001) that people tend to prioritize certain social positions over others. Moreover, he stated that prioritizing responsibility towards people who are dependent on them (e.g. family) over people who are considered less dependent on them (e.g. friends and colleagues), comes second to self-imposed responsibility. From this, it could be concluded that social responsibility, when it is self-imposed, is an internal factor. Nevertheless, acknowledging both the internal and the external sides of social responsibility, Fincham and Jaspars (1980) suggest that the internal side of social responsibility is merely a manifestation of one's position in their external social order.

The great extent to which social responsibility is designated as an influential factor within responsibility research merits the inclusion of social responsibility as a facet of ex-ante responsibility. Social responsibility, in research, is generally described as a sense of obligation towards the wellbeing

of a group or person to whom one feels connected. This description was used as bases for the definition of social responsibility (see Table 1.).

Moral Responsibility. The second most common factor of influence found in responsibility research was morality (Bergsteiner et al., 2007; Birnbacher, 2001; Hall et al., 2017; Tetlock, 1985; Trevino, 1986). Moreover, it has been suggested that a person will take responsibility only when the necessary moral effort is considered justified (Birnbacher, 2001). This could lead to the interpretation that moral responsibility may be the backbone of the actions that result from ex-ante responsibility. Moral responsibility is commonly described as a set of personal values, standards, and convictions, which are self-imposed and can, therefore, only be judged by the person themselves (Bergsteiner & Avery, 2010; Fincham & Jaspars, 1980; Löfmarck et al., 2017; Strydom, 1999). This description indicates that moral responsibility is unequivocally an internal factor.

Norms (i.e., values imposed by others) (Bergsteiner et al., 2007; Nordbye & Teigen, 2014; Tetlock, 1985) might be adopted into one's moral values. However, Strydom (1999) observed that responsibility is becoming more individual. He suggested that rather than to adhere to the traditional limits and norms, people tend to assume responsibility for their surrounding from a more personal perspective. This is underlined by the suggestion that autonomy is a requirement for moral responsibility (Fischer, 1999; Fuller et al., 2006; Pellizzoni, 2004) and that freedom, to determine which values, standard, and convictions are important, is essential to moral responsibility (Birnbacher, 2001; Pellizzoni, 2004; Strawson, 1994; Trevino, 1986). Personal values, standards, or convictions were found to be considered important directional indicators of behaviour (Birnbacher, 2001; Finkelstien, 2009; Fischer, 1999; Holdorf & Greenwald, 2018; Trevino, 1986). Therefore, they were considered to be a fundamental pillar of responsibility which justifies the inclusion of moral responsibility as a facet of ex-ante responsibility. The, above described, broader/global context, as well as the personal values, standards, or convictions, were adapted into the definition of moral responsibility, as can be seen in Table 1.

Task responsibility. The third most found factor which was considered as a facet of ex-ante responsibility was task responsibility. Since ex-ante responsibility is described as responsibility taken in relation to a future event or action it might seem obvious that ex-ante responsibility would have a task responsibility facet (Bergsteiner & Avery, 2010; Lenk & Maring, 2001; Nordbye & Teigen, 2014). Nevertheless, differentiating between internal and external task responsibility is important. In most studies, external ex-ante task responsibility is described as the rules and regulations which are attached to task by others (Bergsteiner & Avery, 2010). Internal ex-ante task responsibility refers to a self-imposed code of conduct attached to a task.

In relation to such an internal code of conduct, several references were found. Commitment, goal-setting, and risk assessment not only suggest an emphatic connection to the event but also to the consequences of that event (Bierhoff, 2001; Holdorf & Greenwald, 2018; Pellizzoni, 2004). Goal

setting and risk assessment were both deemed to be an ex-ante interpretation of possible outcomes of an event (Birnbacher, 2001; Shaver & Drown, 1986). It was suggested that the difficulty of the event and the possibility of negative outcomes were moderators of the amount of ex-ante task responsibility a person is willing to take (Pellizzoni, 2004; Steffel, Williams, & Perrmann-Graham, 2016). It was suggested that perceived negative outcomes, such as blame, of responsive actions were found to incite more help and responsibility taken in an emergency situation (Schwartz & David, 1976).

That people perceive their task responsibility differently under different circumstances seems to be well established in literature. It also seems to be evident that there are external factors of influence (e.g., rules, regulations, risk assessment, and event difficulty) which direct one's action in an event. These factors might seem to influence the personal interpretation of these rules and regulations with regard to a task. However, one's personal code of conduct in relation to a task should also be reflected in ex-ante responsibility. Therefore, the developed task-responsibility definition both reflects the personal interpretation of rules and regulations, but also the personal code of conduct (see Table 1.). These definitions are the basis for the development of a self-reporting survey. The development of which will be described in the method section. The list of ex-ante responsibility survey items can be found in appendix 1.

Research Focus

The main goal of this study is to answer the question 'is the personality trait perspective justifiable within the research field of ex-ante responsibility?'. This goal is deemed accomplished when significant links are found between the HEXACO personality traits and the newly defined facets of ex-ante responsibility. The HEXACO personality inventory (including the interstitial facet proactivity) was used together with a newly developed self-report survey on ex-ante responsibility. See Appendix 1. for the ex-ante responsibility survey item pool and Appendix 2. for the HEXACO inventory survey item list. Literature and the definitions of the responsibility facets and the definitions of the HEXACO traits as well as the description of the interstitial facet proactivity were used as a guideline for hypothesizing possible correlations. The hypothesized correlations will be described per ex-ante responsibility facet.

Moral responsibility (MR) describes a care for the effects of the taken responsibility on the environment in a broad social, cultural, and biological context. The underlying values, standards, and convictions were found to be self-imposed (Bergsteiner & Avery, 2010; Fincham & Jaspars, 1980; Strydom, 1999). Due to the self-imposed nature of MR and its underlying values, it has been suggested to have the highest priority amongst different types of responsibility (Birnbacher, 2001). This might suggest that the underlying values are most important and demand sincerity in the implementations of them into behaviour. In philosophy and ethics, it has been suggested that behaviour is an exercise of one's moral capacities (Fischer, 1999), which could be perceived to underline the importance and the demand for sincerity in the implementation of values. The HEXACO factor honesty/humility entails sincerity and fraud avoidance, yet the description directs them towards others. Based on the priority suggested by Bergsteiner and Avery (2010) sincerity and fraud avoidance towards oneself transcends the sincerity and fraud avoidance towards other people. For example, one's inner self demands someone be true to one's sexual orientations first and foremost towards themselves before acknowledging it towards their surroundings. Assuming that honesty/humility can also be focused on someone's inner self it is proposed that:

Hypothesis 1: *Honesty/humility is positively related to moral responsibility.*

This is underlined by the suggested shift from more traditional limits and norms towards a more individual responsibility (Strydom, 1999). This shift suggests that a person will look for what is intrinsically valuable and connect their personal values, standards, and convictions to it. The search and acceptance of new views were found in two fundamental values of Swartz's 'human value framework' (1992), namely 'universalism' and 'self-direction' (as cited in Ariza-Montes et al., 2017; Bierhoff, 2001). The related values inner harmony and open-mindedness were found not only to link the HEXACO factor honesty/humility but also openness to experience to moral responsibility. Openness to experience describes curiosity, creativity, and acceptance of the unconventional which

fits the broad social, cultural, and biological context described in the definition of moral responsibility. It is therefore proposed that:

Hypothesis 2: *Openness to experience is positively related to moral responsibility.*

Seeking, finding, and implementing new values shows resemblance with the interstitial facet proactivity, which is described as the active pursuit of changes, improvements, and innovations (de Vries et al., 2016). Moreover, proactivity was suggested to predict transformational leadership, which describes an approach that causes a change in individuals as well as in social groups (Jones, Sherman, & Hogan, 2017). The global perspective found in the definition of moral responsibility was also found in the description of a responsible person as one whom takes it upon themselves to have an impact on the world (Fuller et al., 2006). These suggestions together form the basis for the proposal that:

Hypothesis 3: *Proactivity is positively related to moral responsibility.*

Task responsibility (TR) is described as the tendency to take responsibility in light of time, money, and other (im)material matters, such as rules and regulations. These organizational aspects are also found in the HEXACO factor conscientiousness, which describes perfection, discipline, and accuracy in work. Careful deliberation of choices is also an aspect of conscientiousness and could be interpreted as risk-assessment or goal setting which were deemed to be important aspects of ex-ante responsibility (Bergsteiner & Avery, 2010; Bierhoff, 2001; Hall et al., 2017). Task responsibility might be the most achievement driven facet of ex-ante responsibility, as one sets certain goals and assesses the risk and effort it will take to achieve those goals. Achievement orientation was found to be a phrase which was used to describe people with high ambition, which in turn was found to be partly explained by conscientiousness (Jones et al., 2017). These findings together form the basis for the proposal:

Hypothesis 4: *Conscientiousness is positively related to task responsibility.*

In their research Jones et al. (2017) also connected emotionality and agreeableness to ambition, which could suggest that either or both are also related to task responsibility. Yet as task responsibility focuses mainly on the organizational aspect of a task, agreeableness seems the least fitting of the two. Emotionality to a lesser degree also describes a reliance on others but it also describes the stress one might encounter in a difficult task. People who score low on emotionality are described as brave, relatively tough and feel little stress in difficult situations, which could be considered to be beneficial to task responsibility as they don't recoil for a challenge. On the emotional attachment spectrum of emotionality, it was found that people who depend on social confirmation tend to avoid responsibility (Hall et al., 2017). Moreover, it was suggested that emotional stability is beneficial to performance when one works in a team with high interdependency (Kramer, Bhave, & Johnson, 2014). Even though ex-ante task responsibility does not focus on the social aspects of a task, it does incorporate one's assessment of the outcome of the task and the possible judgement of that outcome by others. When one has high anxiety and depends heavily on the opinion (i.e. a high score

on emotionality) of others this might lead to one not taking on task responsibility, which leads to the proposal:

Hypothesis 5: *Emotionality is negatively related to task responsibility.*

Most tasks require interaction with other people, this interaction doesn't refer to the maintenance of social cohesion or conflict reduction as described in the social responsibility facet. It refers to one's social skills, self-confidence, and enthusiasm which might be needed to complete a task successfully, which were found to be positively related to responsibility(Hall et al., 2017; Holdorf & Greenwald, 2018). These skills suggest an interaction with other people, not an interdependence between people, for which it was suggested that an extravert personality would be beneficial (Kramer et al., 2014). The HEXACO factor extraversion describes self-confidence which might be useful in assessing the risk of a task in light of their own abilities and qualities. Furthermore, extraversion describes confidence in social situations and the enjoyment of social interaction. Good communication was suggested to be important to competence trust and responsibility (Lindkvist & Llewellyn, 2003) which could be interpreted as a positive relation between social skills and risk assessment. These findings together lead to the proposal;

Hypothesis 6: *Extraversion is positively related to task responsibility.*

Social responsibility. The newly defined ex-ante facet social responsibility (SR) describes the tendency to foster social cohesion, reduce social conflicts, and a general care for the wellbeing of the people directly involved in a task or role, for which responsibility is taken. Numerous phrases were found which seemed to imply care or concern for others, yet they were not specifically attached to the social aspect of responsibility (Bierhoff et al., 2005; Hall et al., 2017). Responsibility is often researched from a social perspective, yet researchers seldom specify personality traits which might be connected to it.

The descriptions of benevolence and security in Swartz's 'human value framework' (1992) seemed to have the most similarities with the social responsibility facet (as cited in Ariza-Montes et al., 2017), as well as incorporating trait like phrases. Benevolence was described as the preservation and enhancement of the wellbeing for the people one is close to and was linked to honesty, loyalty, and kindness. Furthermore, the fundamental value of was found to imply social order and a sense of belonging. These values seem to suggest a sincerity and an insensitivity to gaining social status, which is found in the description of the HEXACO factor honesty/humility. One study was found in which concern for others was specifically connected to the social aspect of responsibility (Holdorf & Greenwald, 2018). Moreover, it was found to be described with phrases such as humility, benevolence, loyalty, and team player. It was also suggested that selflessness is a strong aspect of responsibility, which is also an aspect of honesty/humility (i.e. insensitivity to personal gain). These findings combined led to the proposal:

Hypothesis 7: *Honesty-humility is positively related to social responsibility.*

Social responsibility does not refer, like task responsibility, to someone's social skills, but to social roles and the maintenance of these roles. Within a team context, it was suggested that extraversion and neuroticism (i.e. Big five personality inventory factors) would be beneficial to team performance (Macht & Nembhard, 2015). Yet is also suggested that extraversion (i.e. Big five personality inventory factor) is mainly beneficial to a team with low interdependence and that neuroticism is beneficial to a team when that team has a high interdependence (Kramer et al., 2014). As the ex-ante facet social responsibility focuses on the strength of the connections in a group it was concluded that extraversion as suggested by Macht and Nembhard (2015), is not applicable to social responsibility as intended this study. The Big five factors agreeableness and neuroticism are described with phrases such as compassion, cooperation, friendliness, and emotional stability (Macht & Nembhard, 2015). These phrases were found to show similarities to the descriptions of emotionality and agreeableness as found in the HEXACO personality inventory. The mentioned phrases, similar to the phrases used by other researchers, seem to imply a degree of care for others (e.g. Bergsteiner & Avery, 2010; Birnbacher, 2001; Hall et al., 2017; Löfmarck et al., 2017). These communalities throughout literature seem to suggest that both agreeableness and emotionality have a positive connection to the ex-ante social responsibility facet as newly defined in this study. Therefore it is proposed:

Hypothesis 8: *Agreeableness is positively related to social responsibility.*

Hypothesis 9: *Emotionality is positively related to social responsibility.*

Apart from these direct relations between the personality traits and the ex-ante responsibility facets, possible interaction between the traits, background variables (e.g. age), and other traits (notably proactivity) will be explored. Especially proactivity might influence the hypothesized relations between HEXACO factors and ER facets. Proactivity indicates the active engagement in domains of interest and is suggested to span the three HEXACO factors extraversion, conscientiousness, and openness to experience. This suggests a possible enhancement of these traits in more proactive people. These three traits are hypothesized to relate to two different ER facets (i.e. TR and MR), which could suggest that the balance of the ER facets might be different for more proactive people than for less proactive people, resulting in possibly different relations between personality and ER.

Two-Stage Study Setup

    This research not only aimed to develop clear definitions of ex-ante responsibility and its facets or establishing a more substantiated trait perspective in the ex-ante responsibility research field. It also aimed to develop and validate a self-report ex-ante responsibility survey, which would be used to research possible relations between the responsibility facets, the HEXACO personality traits, and the interstitial facet proactivity. These potential relations will indicate the legitimacy of the trait perspective in ex-ante responsibility research. To achieve these goals this research was conducted using two studies; an expert study and a main study. The expert study aimed to gather data from experts on the newly developed item pool with regards to item and construct validity. As well as reducing the number of items for the final responsibility survey. In the main study, data was gathered from both the final responsibility survey and the HEXACO survey, which was administered to one group of KI&S employees. The gathered data was used to validate the responsibility facets as well as to test the hypothesized relations with the HEXACO traits.

Method Expert Study

Participants

    For the expert study, 18 people were approached. Due to the nature of this part of the study, only adults with research experience and/or knowledge of responsibility were asked. All expert had master degrees in fields such as public administration, social sciences, and applied mathematics. In addition to their knowledge of research method gained in their master's programs, they have acquired knowledge of responsibility in their normal lives (e.g. parenting and family care). The diversity of their occupations (e.g. organic farmer, municipal official, educational developer, advertiser, chief executive officer) was found to represent a wide range of interpretations of responsibility taken. All participants with an aged approximately between 25 and 43, were Dutch and possessed adequate knowledge of the English language. Both males and females were represented equally within the group of participants.

Materials

    The developed questionnaire was digitally distributed. An anonymous link in the e-mail led to the questionnaire which was built in Qualtrics. All data were analyzed using Microsoft Excel.

Design

    Fifty-two items measuring MR, SR and TR were displayed in blocks of a maximum of six randomized items. Each item had three possible answers (i.e. moral, social, or task responsibility) and was numbered. This numbering was unrelated to the item content but beneficial to the processing of the data and potential written feedback from the participants. To ensure the completeness of

retrievable data it was not possible to skip an item. Participants were provided with room for optional feedback on individual items at the end of each block of six randomized items. By means of interrater agreement (Fleiss Kappa) of the experts, the items were analyzed on construct and item validity which were the bases of the item selection criteria.

Measures

Per responsibility facet, a number of items were developed using the ABC (i.e. affective, behavioral, cognitive) principle of social psychology (Fazio & Olson, 2003). Each item would question either feeling (affection), actions (behavior), or believes (cognition), of the person towards a certain facet. For example "I think that my emotional support really helps people" questions the believes (cognition) one holds towards social responsibility. The items were developed on a five-point Likert scale (i.e. five-point scale from strongly agree to strongly disagree). The first item pool contained 52 items of which 25 items were reversed. However, the participants were not asked to self-report on the questionnaire. The participants were asked to categorize each item into one of the three facets, based on their definitions, regardless of reversed or normal formulation of the item or whether an item was judged a strong or weak representative of the chosen facet. Each block of ex-ante responsibility items was provided with the definitions of the three facets MR, SR, and TR. See Appendix 1. for the complete list of items per facet.

Procedure

The first experts were approached by email, yet the low reaction rate (N = 4) led to the approach of an additional group (N = 14) per Whats-app, one week later. After a short explanation of the research goals and a guarantee of anonymity 11 more people were found willing to participate. They all received the survey internet link via email. The survey was preceded by a short summary of its purpose, a guarantee of anonymity, as well as an explanation on how to fill in the survey. On completing the questionnaire, the participants were thanked for their input. The numeric data which were gathered from the survey were analyzed using Microsoft Excel and Fleiss Kappa was calculated to determine interrater reliability. After which item allocation was analyzed per facet and per item. These data together with the feedback given was grounds for the formulation of the item retention criteria. Interrater reliability (i.e., Fleiss Kappa) was once again calculated for the retained item pool.

Results Expert Study

From the 18 approached people, 15 filled in the questionnaire. One questionnaire was not filled in completely and the data were for this reason not included in the analysis. Interrater reliability for the complete item pool was calculated using Fleiss kappa, resulting in a rather low Kappa of 0.45. Six items (12 %) were allocated correctly by all participants. Four of these items were of the social construct, one of the task, and one of the moral construct. The results per facet are the following.

Table 2. shows task responsibility. Eleven of the TR items (65%) were assigned to the TR construct by the majority of the participants. The majority is considered to be agreement by nine or more participants (i.e. at least 65%). Of the reversed items 63% was allocated correctly by the majority, for the normal formulated item this was 89%. Item T12 (i.e. When I am faced with the consequences of my actions, I tend to make excuses to avoid looking bad.) was allocated to SR by half of the participants and allocated correctly by six of the participants (43%). No written feedback was given on any of the TR items.

Table 2.
Task Responsibility Items Allocation Frequency by Experts

No.	Item	Task	Social	Moral
T1	I like to be in a position in which I am responsible for a large project.	14	0	0
T2	When a task needs to be done, I make sure it gets done.[a]	12	0	2
T3	People look at me to ensure that all work gets done.	9	5	0
T4	I would dislike the responsibilities associated with an important position.	9	2	3
T5	I try to avoid being assigned when somebody is asked to implement a new idea.	10	3	1
T6	When I've committed myself to a project, people trust me to accomplish its goals.[a]	11	2	1
T7	I am always willing to take charge when things need to get done.	10	1	3
T8	I avoid positions in which a lot of people have to rely on me.	5	8	1
T9	I will start with a task even if I don't oversee the possible consequences of it.[a]	13	1	0
T10	I like taking responsibility when things need to get done.[a]	12	0	2
T11	I think it is acceptable to make excuses to avoid important tasks.[a]	11	1	2
T12	When I am faced with the consequences of my actions, I tend to make excuses to avoid looking bad.[a]	6	7	1
T13	I will do everything in my power to keep a promise.	8	4	2

No.	Item	Task	Social	Moral
T14	I don't think that the consequences of tasks or projects I do are mine to bear.	7	3	4
T15	I dislike being in a position in which I am held accountable for what I do.	9	2	3
T16	I blame myself when I have neglected to act on a task that was mine to do.[a]	11	1	2
T17	I estimate what a 'job well done' will look like when engaging in new obligations.[a]	13	1	0

Note. N = 14. [a]Allocated correctly by at least 64% of the experts.

Table 3. shows social responsibility. Seventeen of the eighteen (94%) SR items were allocated correctly by the majority. Amongst these were all normal formulated items. Of the reversed item only one item was not allocated correctly by the majority. The exception was item S6 (i.e. I think that people are just as well off without help from me.), which was allocated correctly by eight participants (57%). The remaining 43% of the allocation was evenly divided between TR and MR. No written feedback was given on any of the SR items.

Table 3.
Social Responsibility Items Allocation Frequency by Experts

No.	Item	Task	Social	Moral
S1	I deeply care about the welfare of the people around me.[a]	1	12	1
S2	I always ensure that people in my group feel happy.	0	14	0
S3	I think that my emotional support really helps people.	0	14	0
S4	It doesn't really bother me when people I know get into trouble.	1	9	4
S5	I always try to avoid getting involved when friends or colleagues have a conflict.[a]	1	11	2
S6	I think that people are just as well off without help from me.	3	8	3
S7	When somebody faces a problem, I always offer support.[a]	2	11	1
S8	I try to steer clear from people who demand a lot of attention.	3	10	1
S9	I will always work in the interest of my group, even if it goes against my own best interest.[a]	1	11	2
S10	I think it is impossible to keep everyone happy all the time.[a]	0	12	2
S11	I don't consider the impact of my actions on the group before I do something.	4	9	1
S12	I feel very involved with the well-being of the group.	0	14	0
S13	I blame myself when a conflict in my group gets out of hand.[a]	1	12	1

No.	Item	Task	Social	Moral
S14	I feel bad if the relationships in my group are under tension.[a]	1	13	0
S15	I prefer to excuse myself from difficult social situations in my group.[a]	3	11	0
S16	I immediately take action when I think someone in my group needs help.[a]	1	13	0
S17	People look at me to keep the relationships within our group positive.[a]	2	11	1
S18	It hurts me when someone definitively leaves a group that I am part of.	0	14	0

Note. N = 14. [a]Allocated correctly by at least 64% of the experts.

Table 4. shows moral responsibility. Fourteen of the seventeen MR items (82%) were allocated correctly to MR by the majority. Of the reversed items 89% was allocated correctly by the majority, as was 75% of the normally formulated items. Surprisingly, one moral responsibility item was allocated to social responsibility by nine of the 14 participants (i.e. item M11; Energy I contribute to the welfare of others is well-spent.). The allocation of item M2 (i.e. I always try to do what is best for everyone, instead of what is best for only my own group.) was equally divided between SR and MR. Written feedback was given on four occasions, two of which pertained to item M4 "I do not care a lot about the consequences of my actions on society". One comment questioned the item's clarity by suggesting that the term "a lot" is open to interpretation, which rendered the item unclear. The other comment which questioned the construct clarity was overruled, as 71% of the experts allocated the item to the correct construct. The item clarity comment was reviewed and found be legitimate therefor the subjective term "a lot" was removed from the item. The items which received one comment each were not altered or removed as a result of the feedback.

Table 4.
Moral Responsibility Items Allocation Frequency by Experts

No.	Item	Task	Social	Moral
M1	I feel pain when thinking about how we—humans—deal with the environment.[a]	1	1	12
M2	I always try to do what is best for everyone, instead of what is best for only my own group.	0	7	7
M3	I tend to think about the broader ethical implications of my behaviours.[a]	0	1	13
M4	I do not care *(a lot)* about the consequences of my actions on society.	2	2	10

No.	Item	Task	Social	Moral
M5	In my daily life, I do not pay a lot of attention to what is best for the environment.	2	2	10
M6	Society functions best when people just care about themselves, their next of kin, and their close friends.	1	5	8
M7	I am attracted to jobs that aim to help the world.[a]	2	1	11
M8	Getting things done in life often involves violating some ethical norms.[a]	2	1	11
M9	It makes me sad when people don't take responsibility for the consequences of their actions on the world.	1	3	10
M10	I am unwilling to make sacrifices for the greater good.	1	4	9
M11	Energy I contribute to the welfare of others is well-spent.	0	9	5
M12	The broader consequences of my actions are for someone else to worry about.[a]	1	2	11
M13	I believe that the influence of my actions on the world is negligible.[a]	1	0	13
M14	The world is going down the drain, it is no use trying to change that.	0	0	14
M15	I tend to make excuses so I don't have to deal with the problems of the world.	3	1	10
M16	I feel bad when I know my actions may have indirectly harmed the world.[a]	0	1	13
M17	When I make decisions, I account for indirect influences of my actions on the world.[a]	1	1	12

Note. N = 14. [a]Allocated correctly by at least 64% of the experts.

Item Retention

The initial interrater reliability was deemed rather low ($k = 0.45$) for the whole item pool. In general, a Kappa larger than .70 is considered an indicator of a good interrater agreement, above .50 is considered moderate (Field, 2013). Therefore a Kappa between .50 and .70 is considered recommendable at this stage of a explorative research. After analyzing the gathered data, criteria were formulated as to which items were to be selected for the Basis Ex-ante Responsibility (BER) survey. Firstly, the construct pools should have a balance of positive and reversed items as well as a balanced distribution between affection, behavior, and cognition items. Secondly, where allocation was questionable, the dispersion of the wrongful allocation was considered. Division between the not intended constructs of the wrongfully allocated items was preferred over uniformity, as the former implies more construct validity. For example; a social construct item with a consensus of ten out of

fourteen would be preferred for retention when the four remaining allocations were distributed evenly between task (2) and moral (2) rather than when this distribution was skewed (e.g. task 0 and moral 4).

These criteria resulted in an item pool with a Fleiss Kappa of .59. On a facet level, the Fleiss Kappa calculation showed a paradox. All retained items we allocated correctly by at least nine of the fourteen participants. This indicates an agreement amongst the experts of at least 64%, yet this doesn't take chance agreement into account. The Fleiss Kappa calculation, on a facet level, revealed values between -0.6 and 0.1. This would indicate an extreme poor interrater reliability or skewed variables. Finding an average of 89% agreement for each of the retained items could also be an indication that the limited amount of answer choices made allocating the items correctly was rather easy. On the other hand, it could also indicate item and construct clarity. This is substantiated by the lack of received written feedback. Finding that the majority of the participants allocated the retained items correctly was grounds for concluding that the retained item pool was adequate. Both in general, as well as on a facet level. Each of the facets contained 11 items and was characterized as follows.

TR, with an average item agreement of 85%, contained five reserved items and was to be operationalized by three affection, four behaviour, and four cognitive items. Allocation consensus amongst the experts on all these items was at least nine out of fourteen (64%). The item pool for SR consisted of four reversed items and seven normal items and had an average item agreement of 84%. Allocation consensus on these items was at least eleven out of fourteen (79%). SR would be operationalized by four affection, four behavior, and three cognition items. Allocation consensus for the selected MR items was ten out of fourteen (71%) and had an average item agreement of 85%. Six of the eleven MR items were reversed. The eleven items consisted of five affection, two behavior, and four cognition items. One MR item (i.e. M4) was adjusted as a result of received feedback. See Appendix 1. for the final list of items per facet.

The focus of the main study is to validate the developed survey and search for correlations between it and the HEXACO personality inventory survey. For this reason, this part of the study is divided into two stages. Stage one focuses on validating the developed survey. In the second stage, the final selection of items will be used and will henceforth be referred to as ER (Ex-ante Responsibility). The second stage of the study focuses on the relations between the ER facets and the HEXACO factors. For this one set of data was used, the descriptions for participants, procedures, materials, design, measures, and analyses pertain to both stages of the study. The results and discussion of both stages will be discussed separately.

Participants

Of the approximately 800 people who were approached 100 people responded (13%). This low response rate was found to be attributable to two main causes. Firstly, the length of the combined survey made it difficult for participants to complete it in their breaks. Secondly, the survey was distributed in March, which is the tax declaration period in the Netherlands. Therefore, the KI&S employees are very busy and might not have found the time to participate. All respondents were working at the Dutch Tax office call Centre (KI&S) which has four different locations in The Netherlands (i.e. Apeldoorn, Groningen, Hengelo, and Leeuwarden). All employees were asked to fill in the survey, no discrimination was made on age ($M = 41$, $SD = 10.7$, $n = 83$), gender, function, or educational level (see Table 5.).

Table 5.
Demographic Data Participants; Education, Work level, Department, and Gender.

	Education[a] $n = 99$	Work level[b] $n = 86$	Department	$n = 98$	Gender	$n = 96$
1	1 %	19 %	Communication	35 %	Male	36 %
2	1 %	24 %	Knowledge	37 %	Female	64 %
3	44 %	20 %	Staff	12 %		
4	20 %	20 %	Management	14 %		
5	5 %	13 %	HRM	2 %		
6	26 %	3 %				
7	3 %	1 %				

[a]Secondary education from low to high, 1 = VMBO, 5 = VWO and 7 = University. [b]Classification of one's own position in the organization in seven levels with 1 = Executive employee, 4 = Middle management and 7 = Top position in a large organization (> 1000 employees).

Materials

The Qualtrics survey was distributed through means of the internal email program of the Dutch Tax office. The gathered data were analyzed using Excel and SPSS.

Design and analyses

For this cross-sectional study, the data gathered from one group of participants at one point in time. However, the data were analyzed in two stages. In the first stage, the data from the BER survey were submitted to multiple analyses to retain the best suitable items in Ex-ante Responsibility (ER) for further analysis in stage two. Worthington and Whittaker (2006) describe the most commonly used methods for scale development. In line with their description, the following methods were used. Firstly, for the exploratory factor analysis, principal axis factoring (PAF) and parallel analysis (PA) were conducted. These were used to determine the sample adequacy (i.e. KMO) and the potential number of factors within the data. As MR, SR, and TR are developed as facets of ex-ante responsibility, it is assumed that they will correlate with each other and therefore an oblique rotation (i.e. direct oblimin) was chosen for all PAF analyses. The Eigenvalues from the PA and the PAF were used as a guide to determine factor retention. Subsequently, four PAF analyses with a predetermined number of factors were conducted. Analyzing these PAFs as well as analyses on item correlation, Skewness, Kurtosis, and communalities were grounds for item retention. Finally, the retained items and scales (i.e. ER) were once more submitted to PAF, correlation, and reliability analyses before proceeding to stage two.

In this second stage, the data from the ER were put together with the HEXACO data and submitted to correlation, regression, and moderation analyses to research the above-mentioned hypotheses. The item pool of the responsibility facets was computed into the facet variables MRF ($\alpha = .75$), TRF ($\alpha = .77$), and SRF ($\alpha = .67$). The HEXACO items were computed into the predetermined factors honesty-humility ($\alpha = .72$), emotionality ($\alpha = .81$), extraversion ($\alpha = .81$), agreeableness ($\alpha = .84$), conscientiousness ($\alpha = .81$), openness to experience ($\alpha = .69$), and interstitial facet proactivity ($\alpha = .58$). Due to the explorative nature of this research forced entry regression analyses (FRA), after which hierarchical regression (HR) and moderation analyses (Process v3.3, A.F. Hayes) were performed (Field, 2013). The analyses were performed with the different ER facets as dependent variables. The HEXACO factors, the interstitial facet proactivity, and the demographic variable age were used as independent variables. Moderation analyses were performed based on the regression analyses outcomes. Additional moderation analyses for gender were performed for all regression outcomes.

Measures

The complete survey was translated into Dutch before this stage of the study. To check the correctness of the translation a native English speaker was asked to translate the Dutch items back to

English. The original English items were compared with the translation provided by the native speaker. Apart from some minor deviations in sentence structure, no fundamental differences were found. Therefore the Dutch translation was deemed adequate and was subsequently used in the main study without any alteration based on this translation check (see Appendix 1 for the complete ex-ante responsibility item list, per facet).

Five demographic questions (i.e. age, work-level, function, gender, and education) were not mandatory, which accounts for the missing data. However, the demographic information was not fundamental for the primary subjective of this study and is therefore not used for hypothesis testing, with the exception of the demographic data on age and gender. The demographic questions were followed two blocks containing the 33 (randomized) ex-ante responsibility items which were retained from the expert study. The 104 HEXACO inventory items followed the (B)ER items. They were randomized and put into blocks of similar size to the (B)ER blocks (i.e. approximately 15 items). No indication was given as to which block measured what construct. Both the (B)ER items and the HEXACO items were to be rated on a five-point Likert scale, ranging from strongly agree to strongly disagree. The ex-ante responsibility facets, the HEXACO factors, and interstitial facet proactivity mentioned in the hypotheses are measured as follows.

Ex-ante responsibility. The three facets of ex-ante responsibility were measured by 11 items each. Each self-report item would measure either feelings, actions, or believes, of the person towards a certain facet on a five-point Likert scale (i.e. five-point scale from strongly agree to strongly disagree). The definitions of the facets can be found in Table 1. and the facet scoring scale can be found in Appendix 3.

HEXACO factors. All HEXACO factors consist of four facets. For example, Agreeableness consists of the facets Forgivingness, Gentleness, Flexibility, and Patience. Each facet is operationalized by four questions which together make up the factor agreeableness. As the above-mentioned responsibility facets and the survey are newly developed, searching for correlations on a HEXACO facet level is deemed to be too advanced for this stage of the survey development. Therefore, the factors will be used and are operationalized by 15 or 16 questions per factor. Due to human oversight, three HEXACO items were not included in the survey. These questions pertain to three different factors (i.e. honesty, emotionality, and openness to experience) and were still measured by at least 15 items it is assumed that the missing data doesn't influence the analysis significantly (see Appendix 2. for the missing HEXACO items). The HEXACO scoring is described in Appendix 4.

Proactivity. Operationalized by four items, proactivity is not a HEXACO factor. Research has shown it to be an interstitial facet (de Vries et al., 2016) linking the different HEXACO factors. The reoccurrence of the term proactivity in responsibility research has led to the inclusion of proactivity in this study. The HEXACO factors all consist of four facets all of which have four items designed to measure that specific facet. The operationalizing of proactivity by four items can, therefore, be

compared to the operationalizing of the HEXACO facets which combined form a HEXACO factor. De Vries and Born (2013) describe proactivity as a tendency to actively tackle problems and seek changes. Highly proactive people are suggested to seek involvement in new ideas. Whereas people who are less proactive are suggested to take initiative less.

Procedure

The manager of the location Hengelo was informally approached, with the request to distribute the survey on a larger scale than only the Hengelo location. The Hengelo manager submitted the request to her fellow managers of the other locations. They all allowed distribution of the survey within their location. The Hengelo manager sent the survey email to her colleagues who in turn distributed the email within their locations. All potential participants received an email in which the researcher and the study were introduced. The study goals were shortly described, as well as the estimated time needed for filling in the survey, and a guarantee for anonymity. Potential participants were enticed to fill in the survey using the promise that all locations would receive a treat when data from more than 300 participants was registered. The survey link was underneath the email. The Qualtrics survey had an introduction page in which thanks was given for participation as well as a short instruction on how to fill in the survey. The introduction did not specify which blocks were measuring what construct. Furthermore, the guarantee was given that all information would be handled with the greatest confidentiality. At the end of the survey, the participant received the notification that the data was sent, stored, and once again they were thanked for their participation. Two weeks later the survey was closed and the data collected. On completion of this study, all managers and participants who filled in their email-address received a report on the general results in English and in Dutch. As well as an invitation to email the researcher if they wanted a copy of the complete study.

Results Main Study

Stage One; Survey Validation

Parallel analysis (PA) and principal axis factoring (PAF) with oblique rotation were used to obtain first indications on the number of factors which might be found in the responsibility survey data. The PA raw data Eigenvalues were found to be higher than the Eigenvalues, in the random data generated by the parallel analysis, in five factors. As well as being higher than the commonly used Eigenvalue-norm of one. The PAF showed KMO .61 ($p < .001$) and a variance explained by five factors of 45%.

For item elimination purposes four PAFs with a fixed number of factors (i.e. two up and including five) were performed. The PAFs with a fixed number of two and five factors showed no clear content pattern in the factors. Furthermore, the five-factor PAF showed only complex items in the fifth factor. A complex item is described as an item which has strong loadings ($> .32$) on more than one factor (Worthington & Whittaker, 2006). These results suggest that there are more than two, yet less than five factors within the responsibility data. Both PAFs with a fixed number of three and four factors showed a clear content pattern in three factors, the fourth factor contained no clear themed subject matter. For this reason, the three-factor solution was used for further item reduction. The three-factor solution explained 34 % of the total variance (Table 6.).

Table 6.
Three-Factor Correlation Matrix

Factor	1[a]	2[b]	3[c]
1[a]	-		
2[b]	.03	-	
3[c]	-.21	-.13	-

Note. N = 100. [a]Factor comprised mostly of moral responsibility items. [b]Factor comprised mostly of task responsibility items. [c]Factor comprised mostly of social responsibility items.

The item reduction was subsequently based on communalities Skewness, Kurtosis, and item correlation. Table 7. and Table 8. show the pattern matrix of the three-factor PAF with an oblique rotation, per factor. Complex items ($r > .32$ on two or more factors) are denoted in bold lettering. The additional columns contain the communalities, means, standard deviations, Skewness and Kurtosis, as well as the calculated Skewness and Kurtosis Z-scores. Communalities are considered low when $< .40$ and are distinguished by bold lettering. Normal distribution in the sample may be assumed with a significance of $p < .05$ when Skewness and Kurtosis Z-scores lie between -1.96 and +1.96 (Field, 2013). Values which do not fall within these measures are indicated bold in Table 7. and Table 8. The BER item correlation matrix can be found in Appendix 5.

Exploratory factor analysis. Factor one (Table 7.) showed a clear MR subject theme in the items, with the exception of the last two TR items. These items (i.e., T16 and S13) showed loadings ranging from -.29 to .18 which is considered to be very weak. Furthermore, item S13 had a low communality of .23 and no significant (p < .01 two-tailed) correlation to any other responsibility item. Within the first factor, one item showed significant (p < .001) Skewness as well as Kurtosis (i.e., item M12).

Table 7.
First Three Factor PAF Pattern Matrix Factor Loadings, Communalities, Means, Standard Deviations, Skewness and Kurtosis

Item[b]	Factor loading[a] 1	2	3	Com.[c]	M	SD	SE	Skew.[d]	Z-Skew[e]	Kurt.[f]	Z-Kurt.[g]
M5	.67	-.01	-.08	.59	3.76	.92	.09	-.52	**-2.17**	-.45	-.94
M3	.65	-.07	-.01	.58	3.59	.94	.09	-.41	-1.71	-.09	-.19
M16	.62	-.18	.10	.56	3.49	.98	.10	-.33	-1.38	-.72	-1.50
M4	.54	.26	.09	.50	3.96	.96	.10	-.89	**-3.68**	.58	1.22
M17	.54	-.04	.00	.58	3.36	.94	.09	-.48	**-2.00**	-.23	-.48
M1	.52	-.26	.03	.54	3.78	.89	.09	-.41	-1.71	-.48	-1.01
M7	.51	-.08	-.09	.55	3.21	.99	.10	-.05	-.21	-.58	-1.20
M13	.40	.14	-.15	.46	3.00	.97	.10	-.13	-.55	-.83	-1.74
M14	.39	.09	-.07	.55	3.00	.97	.10	-.13	-.55	-.83	-1.74
M8	.37	.10	-.06	.50	3.79	.94	.09	-.32	-1.33	-.76	-1.58
M12	.34	.15	-.03	.55	4.03	.82	.08	-1.06	**-4.38**	1.73	**3.63**
T16	.29	.03	-.24	.43	4.07	.64	.06	-.77	**-3.19**	2.12	**4.42**
S13	.18	-.15	.10	**.23**	2.47	.92	.09	.21	.88	-.76	-1.58

Note. N = 100. [a]Rotation converged in 12 iterations. [b]Complete item text can be found in Appendix 1. [c]Communalities (low score < .40 in bold). [d]Skewness. [e]The SE Skewness of .24 was used to calculate the Z-skewness (No normal distribution with *p* < .05 in bold). [f]Kurtosis. [g]The SE Kurtosis of .48 was used to calculate the Z-Kurtosis (No normal distribution with *p* < .05 in bold).

Factor two (Table 8.) was judged to be TR as seven of the ten items were of this construct. Three of the ten items had a social construct. The two SR items showed a strong loading >.32 (i.e. items S15 and S5) and one (i.e. item S10) showed a poor loading < .32. Item S10, furthermore, showed a low community of .31 and no significant, *p* < .01 two-tailed. For the TR items, significant (*p* < .001) Skewness and Kurtosis were found with item T11 in factor two, item T17 showed a low loading (< .30) on any of the factors. The unanimously correctly allocated TR item (i.e. item T1) showed to be the second strongest loading item of all TR items.

The third factor (Table 8.) showed a predominant social theme in the items (i.e. seven out of ten) which all loaded negatively ranging from -.62 to -.34. Three social items showed strong complex

loadings (i.e. S18, S1, and S12). Two of the three task items found in this social factor showed notable data. Item T6 showed complexity, item T9 showed low communality (i.e. .33) and no significant ($p < .01$, two-tailed) correlation with any of the other items. Furthermore, within this factor, three items showed significant ($p < .001$) Skewness as well as Kurtosis (i.e. S14, T6, and S12). Item S12, as well as item S18, showed complexity despite the unanimous correct allocation of these items in the expert study. The strongest loading SR item was also unanimously allocated correctly by the experts in the expert study.

Table 8.
Second and Third Three Factor of PAF Pattern Matrix Factor Loadings, Communalities, Means, Standard Deviations, Skewness and Kurtosis

Item[b]	Factor loading[a]			Com.[c]	M	SD	SE	Skew.[d]	Z-Skew[e]	Kurt.[f]	Z-Kurt.[g]
	1	2	3								
T7	-.12	.72	-.14	.72	3.59	.94	.09	-.41	-1.71	-.09	-.19
T1	-.04	.71	-.00	.61	2.97	1.06	.11	-.04	-.18	-.72	-1.50
T10	-.05	.68	-.13	.64	3.72	.83	.08	-.52	**-2.13**	-.12	-.25
T5	-.02	.63	-.07	.54	3.63	.90	.09	-.23	-.95	-.24	-.51
S15	.03	.53	-.06	.55	3.58	.97	.10	-.44	-1.81	-.52	-1.08
S5	.05	.45	.29	.46	3.04	1.02	.10	-.25	-1.05	-.53	-1.10
T11	.11	.38	.02	.44	4.26	.73	.07	-1.08	**-4.47**	1.69	**3.53**
T15	-.06	.33	-.13	.43	3.72	.87	.09	-.85	**-3.52**	.55	1.15
T17	.21	.22	-.13	.49	3.68	.74	.07	-.65	**-2.68**	1.19	**2.49**
S10	.00	.11	.05	**.31**	4.40	.67	.07	-1.50	**-6.23**	5.40	**11.29**
S2	.17	-.12	-.63	.70	3.60	.86	.09	-.65	**-2.70**	.58	1.21
S16	.07	.16	-.51	.40	3.82	.69	.07	-.32	-1.34	.25	.52
S14	.15	-.22	-.51	.48	3.96	.62	.06	-.76	**-3.15**	2.11	**4.41**
S18	**-.14**	**-.43**	**-.44**	.53	3.29	.89	.09	-.26	-1.08	-.31	-.65
S3	.10	.01	-.42	.46	3.93	.67	.07	-.12	-.51	-.19	-.40
S1	.30	-.04	-.40	.62	4.34	.62	.06	-.64	**-2.67**	.79	1.66
T6	.11	.35	-.39	.61	3.92	.72	.07	-1.20	**-4.98**	3.13	**6.54**
S12	**.32**	**.03**	**-.35**	.52	4.08	.69	.07	-1.04	**-4.31**	3.51	**7.34**
T2	.03	.11	-.34	.41	4.27	.68	.07	-.79	**-3.27**	1.05	**2.20**
T9	.12	-.10	.24	**.34**	2.82	.91	.09	.37	1.52	-.98	**-2.05**

Note. N = 100. [a]Rotation converged in 12 iterations. [b]Complete item text can be found in Appendix 1. [c]Communalities (low score < .40 in bold). [d]Skewness. [e]The SE Skewness of .24 was used to calculate the Z-skewness (No normal distribution with $p < .05$ in bold). [f]Kurtosis. [g]The SE Kurtosis of .48 was used to calculate the Z-Kurtosis (No normal distribution with $p < .05$ in bold).

The final moral responsibility facet (MRF) contains the six strongest loading moral items. None of which none had a complex loading, low communality (< .40) or significant ($p < .001$) Skewness and Kurtosis. Nevertheless, MRF does not entail the unanimously correct allocated MR item (i.e. item M14) from the expert study. The final task responsibility facet (TRF) also contained six items which had no complex loading or low communality. Even though item T11 did show a significant ($p < .001$) Skewness and Kurtosis, it is was retained to complete the intended six items per construct. The TRF does contain the one item (i.e. item T1) which was unanimously allocated correctly in the expert study. The final social responsibility facet (SRF) contained five items of which one had a complex loading (i.e. item S1) and one had significant ($p < .001$) Skewness and Kurtosis (i.e. item S14). Three social items showed complex loadings. Two of these (i.e. S18 and S12) had small (< .23) differences between the social loading and the other factor loading. As the loading difference for item S1 was .98 this item was retained for the SRF item pool. Attempting to have equally sized item pools, item S14 was retained for the SRF item pool, despite its Skewness and Kurtosis. These facts notwithstanding, none of the items showed complexity in the final three-factor PAF with an oblique rotation of the ER items, as can be seen in Table 9.. Furthermore, the reliability for all three facets (i.e. MRF $\alpha = .75$, TRF $\alpha = .77$, and SRF $\alpha = .67$) showed to be adequate.

Table 9.
Three Factor PAF Pattern Matrix of ER Items

		Factor		
Item		1	2	3
M16	I feel bad when I know my actions may have indirectly harmed the world.	.64	-.10	-.00
M3	I tend to think about the broader ethical implications of my behaviours.	.61	-.01	-.15
M5[a]	In my daily life, I do not pay a lot of attention to what is best for the environment.	.57	.02	-.27
M17	When I make decisions, I account for indirect influences of my actions on the world.	.56	.01	.06
M1	I feel pain when thinking about how we—humans—deal with the environment.	.56	-.15	-.08
M4[a]	I do not care *(a lot)* about the consequences of my actions on society.	.47	.25	.02
T1	I like to be in a position in which I am responsible for a large project.	.07	.78	.18
T7	I am always willing to take charge when things need to get done.	-.12	.74	-.08
T10	I like taking responsibility when things need to get done.	-.08	.71	-.10
T5[a]	I try to avoid being assigned when somebody is asked to implement a new idea.	-.00	.66	.01
T11[a]	I think it is acceptable to make excuses to avoid important tasks.	.11	.41	.06
T15[a]	I dislike being in a position in which I am held accountable for what I do.	-.11	.31	-.17
S3	I think that my emotional support really helps people.	-.05	.03	-.64
S1	I deeply care about the welfare of the people around me.	.07	-.06	-.56
S2	I always ensure that people in my group feel happy.	.07	-.01	-.55
S14	I feel bad if the relationships in my group are under tension.	.10	-.10	-.48
S16	I immediately take action when I think someone in my group needs help.	.01	.21	-.44

Note. N = 100. [a] Reversed item

Stage Two; relation Analysis ER and HEXACO

The other demographic data on education, work department, and work level were subjected to Chi-square and t-test analysis to investigate possible correlations with the ER facets. No significant correlations were found between these demographics and any of the ER facets. Furthermore, Levene's Test results suggested that equal variance may be assumed between the various groups within the demographics (see Table 10.) with the exception of work level in relation to TRF and SRF. Further ANOVA tests revealed that there is a significant difference in TRF between at least two different department groups (see Table 11.). Bonferroni testing revealed that there is evidence that the level of TRF in the management department significantly ($p < .01$) differs from the level of TRF in the communication department. The interstitial facet Proactivity showed significant ($p < .01$) correlation with all three ER facets (Table 12.). SRF showed significant correlation with four of the six HEXACO factors. The two HEXACO factors that did not correlate with SRF (i.e. honesty/humility and openness to experience), were found to correlate significantly with MRF. The only significant negative correlation was found between emotionality and TRF (-.33, $p < .01$). No significant correlation was found between age and any of the ER facets.

Table 10.
Levene's Test Summary of Equal Variance Within Groups

		Levene's Test	df1	df2	Sig.
MRF Work level	$n = 86$	1.42	14	55	**.17**
TRF Work level	$n = 86$	2.14	14	55	.02
SRF Work level	$n = 86$	2.01	14	55	.03
MRF Gender	$n = 96$	.43	1	94	**.51**
TRF Gender	$n = 96$	.92	1	94	**.34**
SRF Gender	$n = 96$	.96	1	94	**.32**
MRF Education	$n = 99$	1.32	5	92	**.26**
TRF Education	$n = 99$	1.23	5	92	**.30**
SRF Education	$n = 99$	1.32	5	92	**.26**
MRF Department	$n = 98$	*1.45*	4	93	**.22**
TRF Department	$n = 98$	1.63	4	93	**.17**
SRF Department	$n = 98$	1.42	4	93	**.23**

Note. Bold lettering indicates the assumption of equal variance.

Table 11.

Summary of ANOVA, Differences Between Groups for ER Facets

			Sum of Squares	df	Mean Square	F	Sig.
MRF	Work level	Between Groups	12.05	30	.40	1.13	.33
		Within Groups	19.44	55	.35		
		Total	31.50	85			
TRF	Work level	Between Groups	14.33	30	.47	1.74	.03
		Within Groups	15.07	55	.27		
		Total	29.41	85			
SRF	Work level	Between Groups	4.13	30	.13	.72	.82
		Within Groups	10.46	55	.19		
		Total	14.60	85			
MRF Gender		Between Groups	.19	1	.19	.50	.48
		Within Groups	36.30	94	.38		
		Total	36.49	95			
TRF Gender		Between Groups	1.03	1	1.03	2.75	.10
		Within Groups	35.44	94	.37		
		Total	36.48	95			
SRF Gender		Between Groups	.36	1	.36	1.73	.19
		Within Groups	19.72	94	.21		
		Total	20.09	95			
MRF Education		Between Groups	2.09	6	.35	.87	.51
		Within Groups	36.81	92	.40		
		Total	38.90	98			
TRF Education		Between Groups	4.41	6	.73	2.10	.06
		Within Groups	32.16	92	.35		
		Total	36.57	98			
SRF Education		Between Groups	1.64	6	.27	1.32	.25
		Within Groups	19.05	92	.20		
		Total	20.69	98			
MRF Department		Between Groups	.81	4	.20	.49	.73
		Within Groups	37.96	93	.40		
		Total	38.77	97			
TRF Department		Between Groups	4.81	4	1.20	3.52	**.01**
		Within Groups	31.76	93	.34		
		Total	36.57	97			
SRF Department		Between Groups	1.34	4	.33	1.61	.17
		Within Groups	19.33	93	.20		
		Total	20.68	97			

Note. n = 86 (work level), n = 96 (gender), n = 99 (education). n = 99 (department). Bold lettering indicates significant differences between at least two groups within groups with equal variance.

Table 12.

Correlation Matrix ER facets, HEXACO Factors, Proactivity, and Age

	Variables	1	2	3	4	5	6	7	8	9	10	11
1	MRF[a]	-										
2	TRF[a]	-.05	-									
3	SRF[a]	.32**	.10	-								
4	Honesty-humility[b]	.26**	.07	.16	-							
5	Emotionality[b]	.17	-.33**	.22*	.08	-						
6	Extraversion[b]	.04	.48**	.29**	.14	-.25*	-					
7	Agreeableness[b]	.14	.15	.28**	.36**	-.25*	.26**	-				
8	Conscientiousness[b]	.28**	.16	.36**	.35**	.23*	-.01	.06	-			
9	Openness to experience[b]	.35**	.01	.14	.05	-.11	.12	.05	-.01	-		
10	Proactivity[c]	.42**	.38**	.44**	.25*	.01	.43**	.33**	.48**	.24*	-	
11	Age [in years]	.12	.06	-.02	.02	.14	.08	.02	.02	-.03	.13	-
	Mean	3.64	3.64	3.93	3.74	3.04	3.46	3.10	3.65	3.24	3.46	41
	SD	.63	.61	.46	.43	.54	.47	.53	.46	.50	.42	10.7

Note. $N = 100$ for ER facets HEXACO factors, and proactivity. $n = 83$ for age. [a]ER facet. [b]HEXACO factor. [c]Interstitial facet. **$p < .01$. *$p < .05$ level.

Results moral responsibility facet.

   The first FRA (Table 13.) was used to investigate the relations between the HEXACO factors, proactivity, and age might for MRF. Openness to experience ($b = .38$, $p < .01$) and proactivity ($b = .45$, $p < .05$) were revealed to have significant positive relations. Collinearity was found to be low (VIF < 1.91). A hierarchical regression was performed based on the significance found in the FRA which showed that emotionality had a positive relation ($b = .23$, $p < .05$) in addition to openness to experience and proactivity. None of the other variables showed significant relations with MRF. This resulted in the proposed model as seen in Table 14. which explains 28% of the variance in MRF. A mean centred moderation analysis was performed to investigate the possible moderation effect of proactivity on the relations of emotionality and openness to experience with MRF. It was found that proactivity has a significantly ($p < .05$) effect on the relation between MRF and openness to experience. A simple slope analysis showed an interaction effect on three levels. This indicated that the slope for openness to experience predicting MRF was significantly moderated at the mean of proactivity ($b = .36$, $p < .01$) and an even more significant effect at one SD below the mean ($b = .59$, $p < .001$) but not at one SD above the mean ($b = .14$, $p < .28$) (see Figure 1). Therefore, it can be said that low proactivity indicates a higher and more significant positive relation between openness to experience and MRF. Moreover, a high level of proactivity indicates there is no significant effect on the relation between openness to experience and MRF. These interaction effects were found to explain 28 % of the variance in the relation between openness to experience and MRF.

   Age was suggested to have an influence on several HEXACO traits, therefore mean centred analyses were performed to investigate its possible effect on the relation between the trait factors and MRF. Nevertheless, no significant interaction effects were found. Since the sample did not contain an equal number of males and females the predictive factors were analyzed for differences between the genders, yet no significant differences were found. These results together confirm hypotheses two and three, which stated that openness to experience and proactivity would be positively related to MRF. The results did not support hypothesis one, which stated that honesty/humility would have a positive relation with MRF. Nor was age found to have a relation with MR.

Table 13.

Forced Entry Regression Predicting Moral Responsibility from HEXACO Factors, proactivity, and Age

Factor	*b*	SE B	ß	*t*	*p*	LL	UL	VIF
						95% CI		
Constant	-.36	.92		-.39	.69	-2.20	1.48	
Humility	.13	.16	.09	.83	.41	-.18	.43	1.31
Emotionality	.20	.12	.18	1.69	.10	-.03	.42	1.22
Extraversion	-.21	.14	-.15	-1.44	.15	-.49	.07	1.30
Agreeableness	.10	.13	.08	.76	.45	-.16	.36	1.30
Consciousness	.07	.16	.05	.41	.68	-.26	.39	1.68
Openness to experience	.38	.12	.31	3.18	<.01	.14	.62	1.08
proactivity	.48	.19	.32	2.50	<.05	.09	.86	1.90
Age	.00	.01	.08	.79	.43	-.00	.01	1.05

Note. n = 83. Constant is MRF. CI = Confidence Interval. LL = Lower Limit. UL = Upper Limit

Table 14.

Best Fitting Regression model MRF

Factor	*b*	SE B	ß	*t*	*p*	LL	UL
						95% CI	
Constant	-.03	.60		-.06	.95	-1.24	1.16
Openness to experience	.36	.11	.29	3.25	.00	.14	.58
Proactivity	.52	.13	.35	3.98	.00	.26	.78
Emotionality	.23	.10	.20	2.32	.02	.03	.43
Interaction O x P[a]	-.52	.22	-2.35	.02	.02	-.96	-.08

Note. N = 100. [a] Interaction Openness to experience x Proactivity
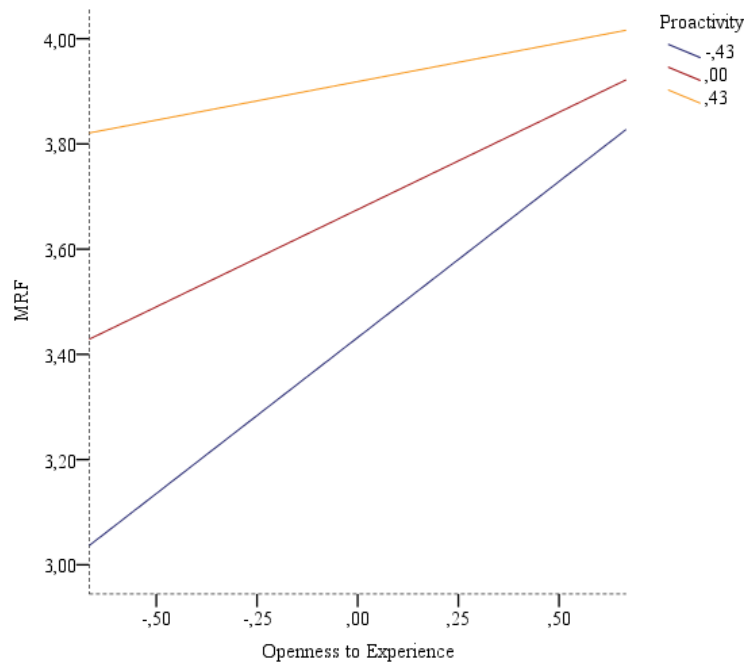
Figure 1. Moderation of Proactivity on Openness to Experience Towards MRF

Discussion moral responsibility facet. Honesty-humility was hypothesized to relate to MRF positively based on the aspects of sincerity and integrity, which were suggested to be directed to one's own moral convictions. However, this relation was not supported by the data. This might suggest that one's convictions, which are assumed to direct one's MRF, might not be dependent on integrity and sincerity.

Proactivity, which was hypothesized to relate positively to MRF based on one's need to impact the world, did show a direct positive relation with MRF. This could suggest that a more active pursuit for change on the environment on an organisational or global scale might be found in proactive people. This could be interpreted as one's personal interpretation and expression of ethical behavior (Fischer, 1999). However, an exploratory analysis showed moderation by proactivity on the relation between openness to experience and MRF. Indicating that, within the current sample, less than average proactive people show a stronger relation between MFR an openness to experience. This might suggest that unusual ideas (i.e. an aspect of openness to experience) might be contemplated, but might be less likely to be expressed in one's moral responsible behaviour.

This possible conservative expression of MFR is underlined by the positive relation found between emotionality and MRF. This relation suggests that MRF is positively influenced by emotional bonds and emotional support from others. Together these results suggest that within the context of MRF both social and moral aspects are represented. Moreover, it might be suggested that MRF might not be expressed in its completeness, but that the expression might conform to a more conservative moral and social acceptable framework (Nordbye & Teigen, 2014; Strydom, 1999).

Results task responsibility facet.

The second FRA (Table 15.) investigated the relations between age, proactivity, the HEXACO factors, and TRF. It revealed a significant positive relation between extraversion ($b = .42$, $p < .01$) and TRF. Furthermore, the relation between emotionality and TRF was found to be significantly negative ($b = -.34$, $p < .01$). Collinearity was found to be low (VIF < 1.91). Once again, the significance data from the FRA was used for a hierarchical regression analysis, which showed an additional relation between TRF and proactivity ($b = .36$, $p < .01$). Neither the hypothesized factor conscientiousness nor the other independent variables were found to be significant additives to the model. A mean centered moderation analyses was performed to ascertain any interaction effect of proactivity on the relations of extraversion and emotionality with TRF. It was found that proactivity had a significant ($p < .01$) interaction effect on the relation between emotionality and TRF. A simple slope analysis showed an effect on three levels. This indicated that the slope for emotionality predicting TRF was significantly moderated at the mean of proactivity ($b = -.35$, $p < .001$) and an even more significant effect at one SD above the mean of proactivity ($b = -.53$, $p < .0001$) but not at one SD below the mean of proactivity ($b = -.12$, $p < .33$) (see Figure 2). This effect was found to explain 31% of the variance in the relation between emotionality and TRF. Age was suggested to have an influence on several HEXACO traits, therefore mean centred analyses were performed to investigate its possible effect on the relation between the trait factors and TRF. This indicated that age did have a significant ($p < .01$) effect on the relation between emotionality and TRF. The subsequent simple slope analysis showed that the slope of emotionality ($b = -.43$) for TRF was significantly ($p < .001$) moderated at the mean of age ($M = 41$) and at one SD (10.7) above the mean the slope of emotionality ($b = -.84$) was found to be moderated by age more significantly ($p < .0001$). Therefore it can be said that an average and higher than average age indicates a higher and more significant negative relation between emotionality and TRF (see Figure 3).

Since the sample did not contain an equal number of males and females the related trait factors were analyzed for differences between the genders, yet no significant differences were found. These results together confirmed hypothesis six which stated that extraversion would have a positive relation with TRF. Hypothesis five was partially confirmed, the data did show a negative relation, yet this is significantly influenced by proactivity. Moreover, proactivity was found, yet not hypothesized, to have a positive relation with TRF. The hypothesized relation between conscientiousness and TRF (i.e. hypothesis four) was not confirmed by the analyses. See Table 16. for the best fitting model.

Table 15.

Forced Entry Regression Predicting Task Responsibility from HEXACO Factors, proactivity, and Age

Factor	*b*	SE B	ß	*t*	*p*	95% CI LL	95% CI UL	VIF
Constant	2.21	.92		2.39	.01	.37	4.05	
Humility	-.02	.15	-.01	-.14	.88	-.33	.28	1.31
Emotionality	-.34	.11	-.31	-2.97	<.01	-.57	-.11	1.22
Extraversion	.42	.14	.31	2.93	<.01	.13	.70	1.30
Agreeableness	-.17	.13	-.14	-1.30	.19	-.43	.09	1.30
Conscientiousness	.23	.16	.17	1.41	.16	-.09	.56	1.68
Openness to experience	-.14	.12	-.11	-1.20	.23	-.38	.09	1.08
proactivity	.32	.19	.22	1.68	.09	-.05	.70	1.90
Age	<.01	<.01	.04	.50	.61	-.01	.01	1.05

Note. n = 83. Constant is TRF. CI = Confidence Interval. LL = Lower Limit. UL = Upper Limit
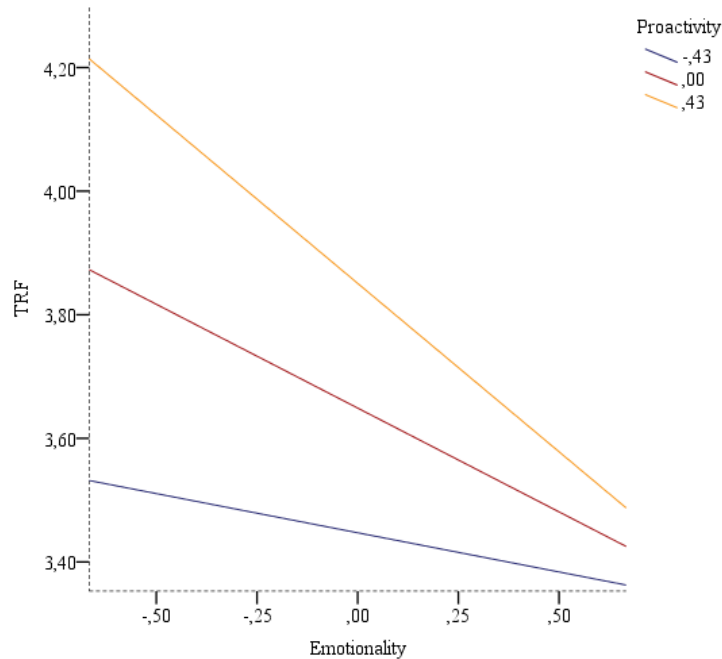
Figure 2. *Moderation of Proactivity on Emotionality Towards TRF*
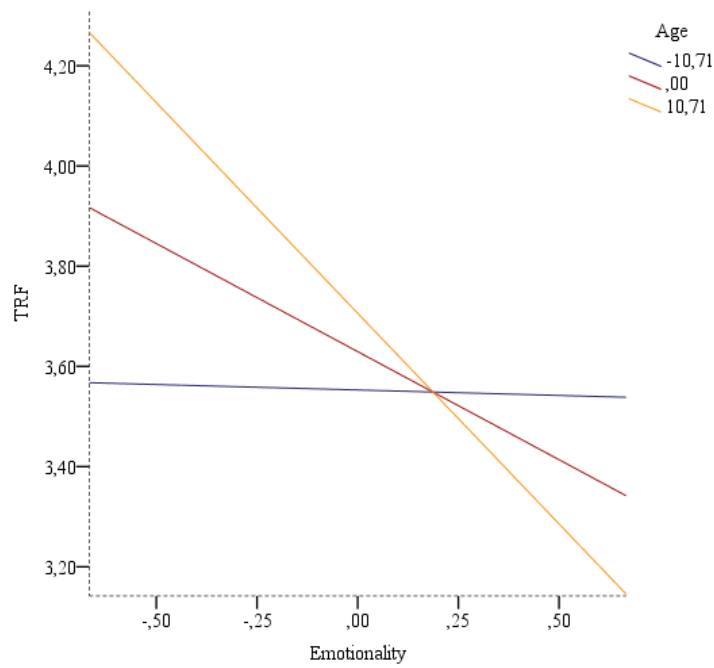
Figure 3. *Moderation of Age on Emotionality Towards TRF*

Table 16.

Best Fitting Regression model TRF

Factor	*b*	SE B	ß	*t*	*p*	95% CI LL	UL
Constant	1.87	.58		3.19	< .01	.71	3.04
Emotionality	-.28	.09	-.25	-2.94	< .01	-.47	-.09
Extraversion	.40	.12	.31	3.23	< .01	.15	.65
Proactivity	.36	.13	.25	2.69	< .01	.09	.62
Interaction E x P[a]	-.48	.17		-2.75	< .01	-.84	-.13
Interaction E x Age[b]	-.03	.01		-3.23	< .01	-.06	-.01

Note. N = 100, *n* = 83 (age). [a]Interaction Emotionality x Proactivity. [b]Interaction Emotionality x Age (N = 83)

Discussion task responsibility facet. It was hypothesized that conscientiousness would positively relate to TRF based on the aspects which describe organizational skills and prudence. However, this relation was not confirmed. This might suggest that within the TRF people don't particularly focus on the organisational execution of a task, but that they may rely more on their perception of their own abilities (i.e. self-confidence) to properly complete the task (Hall et al., 2017). This supposition is underlined by the positive relation found between extraversion and TRF, as well as the negative relation found between emotionality and TRF.

The positive relation between extraversion and TRF confirms the hypothesized need for self-confidence, social skills, and enthusiasm to complete a task successfully. The negative relation between emotionality and TRF was found to be possibly moderated by both proactivity and age, making the relation between emotionality and TRF more negative when people are older or/and more proactive. This might suggest that a need for emotional support and anxiety in relation to TRF is more pronounced in older or more proactive people.

Together with these possible moderation effects, the relations suggest that high self-esteem and low social dependency could be beneficial to the amount of TRF one is willing to assume. This might indicate that low social interdependency is beneficial to TRF (Kramer et al., 2014). Moreover, these results seem to suggest that one's self-confidence in their own abilities, in contrast to one's actual abilities, are important to TRF. This interpretation might lead to the suggestion that people search for jobs which fit their personality, and not necessarily their qualifications or skills (Ariza-Montes et al., 2017; Bergsteiner & Avery, 2010).

Results social responsibility facet.

The final FRA (Table 17.) was used to investigate the possible relations between age, proactivity, and HEXACO factors and SRF. This analysis revealed significant relations between SRF and emotionality, agreeableness, consciousness, and extraversion. Collinearity was found to be low (VIF < 1.91). The excluded table of the subsequent hierarchical analysis showed that proactivity might be a significant added value for the model. However, when proactivity was added to the model conscientiousness was no longer found to be significantly related to SRF, nor was proactivity itself found to have a significant relation with SRF. Furthermore, the model with proactivity included was not found to be a significantly better fit ($p < .13$) than the model without proactivity. Explorative moderation analyses showed that proactivity indeed significantly ($p < .05$) influenced the relation between conscientiousness and SRF. Simple slope analysis on three levels showed that the relation conscientiousness has with SRF was moderated significantly ($b = .20$, $p < .05$) at the mean of proactivity, as well as at one SD above the mean ($b = .35$, $p < .01$) (see Figure 4). This moderation effect of proactivity was found to explain 27% of the variance in the relation between conscientiousness and SRF.

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As the four relations found all measure various aspects of social interaction, moderation analyses were performed to investigate any possible interaction between all these factors. No significant interaction was found between the factors. Nor was gender found to be an interactional influence on any of the found relations.

These outcomes confirm the hypotheses eight and nine which stated that agreeableness and emotionality would have significant positive relations with SRF. The hypothesis that honesty/humility would also have a positive relation with SRF (i.e. hypothesis seven) wasn't corroborated by the analyses. The factors extraversion and conscientiousness were not hypothesized to have a relation with SRF, yet the analyses did indicate them as such, with the notation that proactivity might be a moderating factor for the relation between conscientiousness for SRF (see Table 18.).

Table 17.
Forced Entry Regression Predicting Social Responsibility from HEXACO Factors, proactivity, and Age

Factor	*b*	SE B	ß	*t*	*p*	95% CI		VIF
						LL	UL	
Constant	.74	.66		1.11	.27	-.58	2.06	
Humility	-.16	.11	-.15	-1.45	.15	-.38	.06	1.31
Emotionality	.28	.08	.35	3.41	<.01	.11	.44	1.22
Extraversion	.21	.10	.22	2.10	.03	.01	.42	1.30
Agreeableness	.21	.09	.25	2.30	.02	.03	.40	1.30
Conscientiousness	.25	.11	.26	2.17	.03	.02	.49	1.68
Openness to experience	.09	.08	.11	1.12	.26	-.07	.26	1.08
proactivity	.12	.13	.12	.92	.35	-.14	.40	1.90
Age	-.00	.00	-.11	-1.17	.24	-.01	.00	1.05

Note. *n* = 83. Constant is SRF. CI = Confidence Interval. LL = Lower Limit. UL = Upper Limit
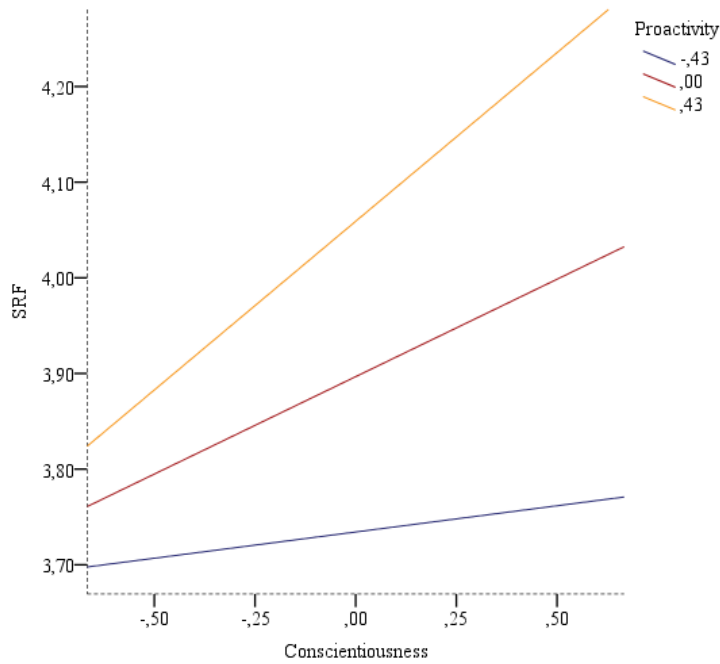
Figure 4. *Moderation of Proactivity on Conscientiousness Towards SRF*

Table 18.
Best Fitting Regression Model SRF

Factor	*b*	SE B	ß	*t*	*p*	95% CI LL	UL
Constant	.43	.51		.84	.40	-.58	1.45
Emotionality	.25	.07	.29	3.25	< .01	.09	.40
Agreeableness	.22	.07	.26	2.96	< .01	.07	.38
Conscientiousness	.27	.08	.27	3.17	< .01	.10	.44
Extraversion	.29	.08	.30	3.38	< .01	.12	.46
Interaction C x P[a]	.34	.14		2.40	< .02	.06	.63

Note. N = 100. [a]Interaction Conscientiousness x Proactivity.

Discussion social responsibility facet. Extraversion was not hypothesized to have a relation with SRF based on the suggestion that extraversion would be mainly beneficial to a team with low interdependence (Kramer et al., 2014) and the assumption that SRF would be reflected in a strong interdependence in the workplace. However, extraversion was found to be positively related to SRF, which could suggest that SRF does not reflect interdependence. Moreover, it could suggest that the enjoyment of social interaction and self-esteem in a social setting is beneficial to social cohesion and conflict reduction as described in SRF.

Based on aspects such as selflessness, sincerity, and loyalty, a positive relation between SRF and honesty-humility was hypothesized. However, analyses did not confirm this hypothesized relation. The honesty-humility aspects selflessness, sincerity, and benevolence suggest an honest and unassuming social interaction. This unassuming honest social interaction might be found in the descriptions of agreeableness and emotionality which entail aspects such as emotional dependence, cooperation with others, and a general concern for others and the social interaction with them. Tetlock (1985) described people as approval seekers, which seems to be underlined by the positive relations found between agreeableness, emotionality, and SRF.

Finding conscientiousness to have for a positive relation with SRF was unexpected as it is a trait which focusses on the organization of one's physical surroundings. However, conscientiousness also refers to diligence, prudence, and perfectionism which indicate a strong work ethic. This suggests that social cohesion and conflict reduction benefits from a strong work ethic.

All in all, the relations found suggest that besides the expected social skills and honest social interaction, a good work ethic is important to social cohesion and conflict reduction in the workplace. This might suggest that SRF has fundamental trait-like qualities, as the positive relations to agreeableness, emotionality, and extraversion seem to suggest, with additional personality traits (e.g. conscientiousness) to ensure social cohesion and conflict reduction within the situational context (e.g. workplace).

A visualization of the hypothesized and not hypothesized predictive factors found, as well as the moderators for some of the relations, can be seen in Figure 5.

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Summary Model Relations
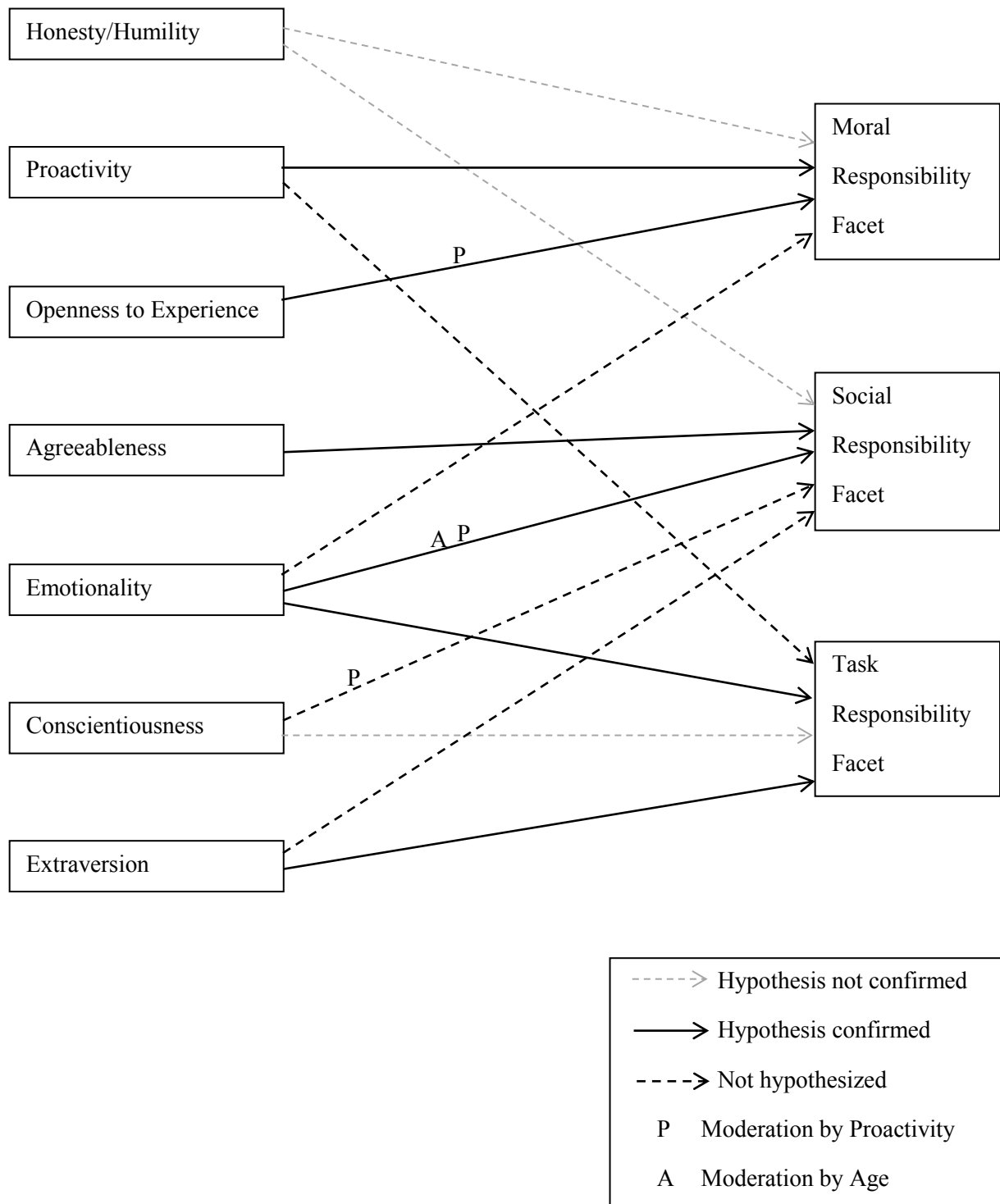
Figure 5. *Summary Model Relations*

General Discussion

The aim of this study was to investigate the possible trait-like qualities of ex-ante responsibility and with it substantiate the bases for future responsibility research with a trait perspective. To this aim, a definition of ex-ante responsibility and its three facets was constructed, based on existing literature. From these definitions, a self-report survey was developed. The original item pool for this survey consisted of 52 items. Since little written feedback to the contrary was given in the expert study, the majority of all the items were found to represent their designated facet (i.e. moral, social, or task responsibility) adequately. Interrater agreement was used to construct the most reliable item pool per facet. This resulted in a survey with 11 items per facet, which had adequate reliability.

Analyses of the subsequent gathered data, on the survey and HEXACO personality inventory, confirmed six of the nine hypothesized relations and revealed an additional three relations, see Figure 5. Overall these results showed positive relations between the HEXACO traits and the ER facets, with the exception of emotionality.

Emotionality showed significant relations with all three ER facets, two of which were positive. These positive relations suggest that the need for support from others is beneficial to SRF and MRF. This might indicate that the level social considerations are an important aspect of the amount of ER one will take (Nordbye & Teigen, 2014). Moreover, emotionality also entails anxiety, which has been suggested to also have a positive relation with ER (Hall et al., 2017). This could suggest that one's anxiety might guide the risk assessment which was suggested to be an important part of ER (Bergsteiner & Avery, 2010; Birnbacher, 2001; Pellizzoni, 2004; Steffel et al., 2016). This seems to be underlined by the negative relation found between emotionality and TRF. These ambivalent relations between emotionality and the ER facets might suggest a possible conflict of interests. Where there is a high level of social interdependence (Kramer et al., 2014) or anxiety, there may be a reduced commitment to positional obligations. However, emotionality was not found to be the only personality trait which showed multiple relations with the ER facets.

The other personality trait which showed multiple relations was extraversion. The positive relations suggest that enthusiasm and social self-confidence are beneficial to both SRF and TRF, which is in line with the positive relation between extraversion and responsibility found by Bierhoff et al. (2005). This might suggest that besides social considerations, social skills are beneficial to ER, which seems to strengthens the perception that social interaction is a considerable aspect of ER (Bergsteiner et al., 2007; Vroom, 1966).

No other personality traits showed multiple relations to the ER facets. However, the interstitial facet proactivity showed several relations. The interstitial facet proactivity was included in this study based on its activating properties and the positive relation to responsibility found by Bierhoff et al. (2005). The two positive relations and various explorative moderation influences found in this study were found to justify the inclusion of proactivity in this study. Moreover, the relations found seem to

underline the suggestion that ER is an important predictor of behaviour (Bernstein, 1995; Nordbye & Teigen, 2014).

Taken together these results suggest that the interstitial facet proactivity and the personality traits emotionality and extraversion are most relevant to ER. Furthermore, they suggest emotionality might be the directive factor for ER. Directing it either towards moral and social responsibility or task responsibility depending on the level of emotionality. Moreover, these results may suggest that self-confident people who are not afraid to lead in the pursuit for change are more ready to accept ex-ante responsibility.

All the relations found in this study suggest that ER may indeed have trait-like qualities. Furthermore, the results indicate that this study is a substantiate addition to the basis on which future ex-ante responsibility research with a trait perspective can be conducted.

Implications

This study aimed to shed more light on ex-ante responsibility and its possible trait-like qualities. The newly developed definitions of ER and its facets were found to be adequately represented in the items of the self-report survey. This substantiates the possibility to replicate this study. Due to its exploratory nature, this study was conducted on the factor level of HEXACO; future researchers may focus on the facet level. Such a study might reveal, for example, whether the moderation effect of age on the emotionality relation with TRF is indeed traceable to one of the emotionality's facets.

Ex-ante responsibility is considered to be one of the most important factors of influence on behaviour (Fuller et al., 2006; Nordbye & Teigen, 2014; Pellizzoni, 2004). This could suggest that specific behaviours would show a different distribution of relation strengths between personality traits and ex-ante responsibility. It has been suggested, for example, that intrinsically motivated volunteer behaviour can be connected to personality traits such as agreeableness and extraversion (Carlo et al., 2005) and that volunteers prefer honesty over praise (Finkelstien, 2009). Therefore, administering the self-report survey amongst volunteers might reveal a different balance in relation strengths for any of the facets, as well as shed light on the remarkable lack of relations of honesty/humility with any of the ER facets found in the current study.

The interstitial facet proactivity was incorporated in this study due to its engagement qualities. Other researchers might find similar reasons to incorporate another trait aspect such as ambition or altruism, which could potentially broaden the ex-ante responsibility with a trait perspective research field. Especially when added to a study amongst volunteers, as both ambition and altruism seem to be recurring in the research field of volunteerism (Bierhoff, 2001; Carlo et al., 2005; Finkelstien, 2009).

It has been suggested that responsibility is experienced differently in different circumstances (Schwartz & David, 1976). It could be suggested that the participants of the current study have, compared to e.g. prison officers, ambulance staff, or other emergency respondents, rather stress-free tasks. Investigating ex-ante responsibility amongst employees in a more stressful occupation might

reveal another dimension of ex-ante responsibility. It might, for example, reveal a more pronounced extraversion in relation to TRF, as self-confidence might be more essential in risk assessment. On the other hand, it could also be revealed in a more pronounced relation between proactivity with MRF which could be considered to be a confirmation of the suggestion that people choose jobs which best fit their personality (Ariza-Montes et al., 2017). These are just some of the many research possibilities that could be undertaken as a result of the findings in the current study.

Limitations

Finding significant relations between the HEXACO factors, interstitial facet proactivity, and all ER facets builds a strong case for the interpretation that ex-ante responsibility does have trait-like qualities. Nevertheless, some caution has to be noted. Firstly, all the usual caveats that come with a relatively homogeneous small sample cross-sectional study, are also applicable here. Secondly, as this is the first known attempt at the development of an ex-ante responsibility self-report survey with a trait perspective the current version of the ER survey isn't indisputable. Therefore, using it, outside research, to measure a person's level of responsibility and attaching consequences to it, would be premature. Moreover, using any future version of the ER survey should be weighed carefully, especially in light of the recently implemented Dutch privacy laws. The HEXACO data used in this study was, due to human error, not complete and should therefore not be taken as absolute. Notwithstanding these limitations, this study shows clear possibilities for future research, as well as endorse the trait perspective in responsibility research.

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Appendices

Appendix 1.

Ex-ante Responsibility Survey Items per Facet (English and Dutch)

	Responsibility Facet Items (English)	Responsibility Facet Items (Dutch)
Item no.[a]	Moral responsibility	Morele verantwoordelijkheid
M1(A)	I feel pain when thinking about how we—humans—deal with the environment.[bc]	Wanneer ik nadenk over hoe de mensheid omgaat met het milieu, stemt mij dat verdrietig.
M2(B)	I always try to do what is best for everyone, instead of what is best for only my own group.	Ik probeer altijd te doen wat het beste voor iedereen is, in plaatst van wat het beste is voor alleen mijn eigen groep.
M3(C)	I tend to think about the broader ethical implications of my behaviours.[bc]	Ik heb de neiging om over de bredere ethische implicaties van mijn gedrag na te denken.
M4(Ar)	I do not care *(a lot)*[d] about the consequences of my actions on society.[bc]	De gevolgen van mijn acties op de maatschappij interesseren mij niet *(echt)*.
M5(Br)	In my daily life, I do not pay a lot of attention to what is best for the environment. [bc]	Ik besteed in het dagelijks leven niet veel aandacht aan wat het beste is voor het milieu.
M6(Cr)	Society functions best when people just care about themselves, their next of kin, and their close friends.	De maatschappij werkt het beste wanneer mensen slechts voor zichzelf, voor familieleden en voor vrienden zorgen.
M7(A)	I am attracted to jobs that aim to help the world.[b]	Ik voel me aangetrokken tot banen die de wereld helpen te verbeteren.
M8(Cr)	Getting things done in life often involves violating some ethical norms.[b]	Om zaken gedaan te krijgen is het vaak nodig sommige ethische normen te schenden.

(continued)

	Responsibility Facet Items (English)	Responsibility Facet Items (Dutch)
Item no.[a]	Moral responsibility	Morele verantwoordelijkheid
M9(A)	It makes me sad when people don't take responsibility for the consequences of their actions on the world.	Het stemt mij verdrietig wanneer mensen geen verantwoordelijkheid nemen voor de gevolgen van hun acties op de wereld.
M10(Cr)	I am unwilling to make sacrifices for the greater good.	Ik ben niet bereid om opofferingen te doen voor het algemeen belang.
M11(C)	Energy I contribute to the welfare of others is well-spent.	Energie die ik in het welzijn van anderen steek, is goed besteed.
M12(Cr)	The broader consequences of my actions are for someone else to worry about.[b]	Het is aan anderen om zich zorgen te maken over de bredere gevolgen van mijn acties.
M13(Ar)	I believe that the influence of my actions on the world is negligible.[b]	Ik geloof dat invloed van mijn acties op de wereld te verwaarlozen is.
M14(Cr)	The world is going down the drain, it is no use trying to change that.[b]	Het gaat alleen maar slechter met de wereld, het heeft geen zin te proberen daar iets aan te veranderen.
M15(Br)	I tend to make excuses so I don't have to deal with the problems of the world.	Ik heb de neiging smoesjes te verzinnen, zodat ik mij niet hoef te bekommeren om de problemen van de wereld.
M16(A)	I feel bad when I know my actions may have indirectly harmed the world.[bc]	Ik vind het vervelend als ik merk dat mijn acties de wereld indirect benadelen.
M17(B)	When I make decisions, I account for indirect influences of my actions on the world.[bc]	Als ik een beslissing neem, denk ik na over de indirecte gevolgen van mijn acties op de wereld.
	Social responsibility	Sociale verantwoordelijkheid
S1(A)	I deeply care about the welfare of the people around me.[bc]	Ik geef veel om het welzijn van de mensen om mij heen.
S2(B)	I always ensure that people in my group feel happy.[bc]	Ik zorg er altijd voor dat de mensen in mijn groep zich gelukkig voelen.
S3(C)	I think that my emotional support really helps people.[bc]	Ik denk dat mijn emotionele steun mensen echt helpt.
S4(Ar)	It doesn't really bother me when people I know get into trouble.	Het doet mij niet veel wanneer mensen die ik ken in de problemen komen.

	Responsibility Facet Items (English)	Responsibility Facet Items (Dutch)
	Social responsibility	Sociale verantwoordelijkheid
S5(Br)	I always try to avoid getting involved when friends or colleagues have a conflict.[b]	Ik probeer altijd te vermijden om betrokken te raken wanneer vrienden of collega's een conflict hebben.
S6(Cr)	I think that people are just as well off without help from me.	Ik denk dat mensen prima zonder mijn hulp kunnen.
S7(B)	When somebody faces a problem, I always offer support.	Wanneer iemand voor een probleem komt te staan, bied ik altijd hulp aan.
S8(Br)	I try to steer clear from people who demand a lot of attention.	Ik probeer uit de buurt te blijven van mensen die veel aandacht nodig hebben.
S9(B)	I will always work in the interest of my group, even if it goes against my own best interest.	Ik zal altijd het beste voor de groep nastreven, ook al is dit minder goed voor mezelf.
S10(Cr)	I think it is impossible to keep everyone happy all the time.[b]	Ik denk dat het onmogelijk is iedereen altijd tevreden te stellen.
S11(Br)	I don't consider the impact of my actions on the group before I do something.	Ik denk niet na over de impact van mijn acties op de groep, voordat ik iets doe.
S12(A)	I feel very involved with the well-being of the group.[b]	Ik voel me zeer betrokken bij het welzijn van de groep.
S13(C)	I blame myself when a conflict in my group gets out of hand.[b]	Ik geef mezelf de schuld wanneer een conflict in mijn groep uit de hand loopt.
S14(A)	I feel bad if the relationships in my group are under tension.[bc]	Ik vind het vervelend wanneer de relaties in mijn groep onder druk staan.
S15(Br)	I prefer to excuse myself from difficult social situations in my group.[b]	Ik trek mij liever terug uit sociaal lastige situaties in mijn groep.
S16(B)	I immediately take action when I think someone in my group needs help.[bc]	Ik kom meteen in actie wanneer iemand in mijn groep hulp nodig heeft.
S17(C)	People look at me to keep the relationships within our group positive.	Mensen kijken naar mij om de relaties binnen onze groep positief te houden.
S18(A)	It hurts me when someone definitively leaves a group that I am part of.[b]	Het stemt mij verdrietig wanneer iemand mijn groep definitief verlaat.

(continued)

	Responsibility Facet Items (English)	Responsibility Facet Items (Dutch)
	Task responsibility	Taak verantwoordelijkheid
T1(A)	I like to be in a position in which I am responsible for a large project.[bc]	Ik ben graag in een positie waarin ik verantwoordelijk ben voor een groot project.
T2(B)	When a task needs to be done, I make sure it gets done.[b]	Als een taak gedaan moet worden, dan zorg ik dat het gedaan wordt.
T3(C)	People look at me to ensure that all work gets done.	Men kijkt naar mij om er zeker van te zijn dat het werk gedaan wordt.
T4(Ar)	I would dislike the responsibilities associated with an important position.	Ik zou de verantwoordelijkheid die bij een belangrijke positie hoort onprettig vinden.
T5(Br)	I try to avoid being assigned when somebody is asked to implement a new idea.[bc]	Ik probeer te voorkomen dat ik toegewezen word als iemand gevraagd wordt om een nieuw idee te implementeren.
T6(C)	When I've committed myself to a project, people trust me to accomplish its goals.[b]	Wanneer ik mezelf aan een project heb verbonden, vertrouwt men erop dat ik de doelen bereik.
T7(C)	I am always willing to take charge when things need to get done.[bc]	Ik ben altijd bereid om de leiding op mij te nemen wanneer zaken gedaan moeten worden.
T8(Br)	I avoid positions in which a lot of people have to rely on me.	Ik probeer posities waarin veel mensen van mij afhankelijk van mij zijn te vermijden.
T9(Cr)	I will start with a task even if I don't oversee the possible consequences of it.[b]	Ik zal aan een taak beginnen, ook al kan ik de gevolgen daarvan niet overzien.
T10(A)	I like taking responsibility when things need to get done.[bc]	Ik neem graag de verantwoordelijkheid wanneer dingen gedaan moeten worden.
T11(Cr)	I think it is acceptable to make excuses to avoid important tasks.[bc]	Ik vind het acceptabel om excuses te verzinnen om belangrijke taken te ontwijken.

	Responsibility Facet Items (English)	Responsibility Facet Items (Dutch)
	Task responsibility	Taak verantwoordelijkheid
T12(Br)	When I am faced with the consequences of my actions, I tend to make excuses to avoid looking bad.	Wanneer ik geconfronteerd word met de gevolgen van mijn acties, heb ik de neiging smoezen te verzinnen om niet in een kwaad daglicht te komen staan.
T13(C)	I will do everything in my power to keep a promise.	Alles wat in mijn macht ligt zal ik doen om een belofte na te komen.
T14(Cr)	I don't think that the consequences of tasks or projects I do are mine to bear.	Ik meen dat de gevolgen van taken en projecten die ik doe niet bij mij liggen.
T15(Ar)	I dislike being in a position in which I am held accountable for what I do.[bc]	Ik vind het niet prettig om in een positie te zijn waarin ik verantwoordelijk word gehouden voor wat ik doe.
T16(B)	I blame myself when I have neglected to act on a task that was mine to do.[b]	Ik geef mezelf de schuld wanneer ik bij een taak die van mij was verzuimd heb te handelen.
T17(B)	I estimate what a 'job well done' will look like when engaging in new obligations.[b]	Ik schat in hoe een taak die "goed gedaan is" eruit zou moeten zien wanneer ik nieuwe verplichtingen aanga.

[a](A)= affective item, (B)= behavioural item, (C)= cognitive item, and (r)= reversed item. [b]Item retained after expert study. [c]Item retained after main study stage one. [d]Text deleted based on expert feedback.

Appendix 2.
Complete HEXACO Inventory Survey Item List (Dutch)

No.	Factor	Dutch Item
1	O[a]	Ik zou me vervelen bij een bezoek aan een kunstgalerie.
2	C[b]	Ik maak thuis of op mijn werk vaak schoon.
3	A[c]	Ik houd zelden een wrok tegen iemand, zelfs niet als ik erg slecht behandeld ben.
4	X[d]	Alles bij elkaar heb ik wel een tevreden gevoel over mijzelf.
5	E[e]	Ik zou bang worden als ik in slecht weer zou moeten reizen.
6	H[f]	Als ik iets wil van iemand die ik niet mag, dan zou ik me erg vriendelijk gedragen om het te krijgen.
7	O	Ik kom graag meer te weten over de geschiedenis en politiek van andere landen.
8	C	Als ik aan het werk ben, stel ik mijzelf vaak ambitieuze doelen.
9	A	Mensen vertellen me soms dat ik te kritisch op anderen ben.
10	X	Ik geef zelden mijn mening in groepsbijeenkomsten.
11	E	Ik maak me soms zorgen over onbenulligheden.
12	H	Als ik niet gepakt zou worden, dan zou ik er geen probleem mee hebben om een miljoen Euro te stelen.
13	O	Ik heb liever een baan waarbij je volgens een vaste routine werkt dan één waarbij je creatief moet zijn.
14	C	Ik controleer mijn werk vaak herhaaldelijk om fouten te vinden.
15	A	Mensen vertellen me soms dat ik te koppig ben.
16	X	Ik vermijd prietpraat.
17	E	Na een pijnlijke ervaring heb ik iemand nodig om me te troosten.
18	H	Veel geld bezitten vind ik onbelangrijk.
19	O	Ik vind het tijdverlies om aandacht te besteden aan radicale ideeën.
20	C	Ik neem beslissingen op basis van 'hier-en-nu' gevoelens in plaats van zorgvuldig beraad.
21	A	Mensen vinden me een heethoofd.
22	X	Ik heb vrijwel altijd veel energie.
23	E	Ik voel tranen opkomen als ik anderen zie huilen.
24	H	Ik ben een gewoon persoon, niet beter dan anderen.
25	O	Ik zou mijn tijd niet willen besteden aan gedichten lezen.
26	C	Ik maak vooraf plannen en regel alvast zaken om te vermijden dat ik op het laatste moment nog dingen moet doen.

No.	Factor	Dutch Item
27	A	Mijn houding ten aanzien van mensen die mij slecht behandeld hebben is "vergeven en vergeten".
28	X	Ik denk dat de meeste mensen sommige aspecten van mijn persoonlijkheid wel mogen.
29	E	Het kan mij niet schelen om gevaarlijke klussen uit te voeren.
30	H	Ik zou niet vleien om op het werk opslag of promotie te krijgen, zelfs al zou het succes hebben.
31	O	Ik vind het leuk om naar landkaarten en plattegronden te kijken.
32	C	Ik span me vaak tot het uiterste in als ik een doel tracht te bereiken.
33	A	Over het algemeen accepteer ik zonder klagen andermans gebreken.
34	X	Als ik anderen ontmoet, ben ik meestal diegene die het contact op gang brengt.
35	E	Ik maak me veel minder zorgen dan de meeste mensen.
36	H	Ik zou in de verleiding gebracht worden om gestolen waren te kopen als ik in financiële nood zou zitten.
37	O	Ik zou graag iets kunstzinnigs doen, zoals een boek schrijven, een lied componeren of een schilderij maken.
38	C	Als ik aan iets werk, besteed ik weinig aandacht aan kleine details.
39	A	Ik ben gewoonlijk vrij flexibel in mijn opvattingen als mensen het met mij oneens zijn.
40	X	Ik geniet er van om veel mensen om me heen te hebben met wie ik kan praten.
41	E	Moeilijke situaties kan ik aan zonder emotionele steun van anderen nodig te hebben.
42	H	Ik zou graag in een zeer rijke, sjieke buurt wonen.
43	O	Ik houd wel van mensen met onconventionele ideeën.
44	C	Ik maak veel fouten omdat ik niet nadenk voordat ik iets doe.
45	A	Ik ben zelden boos, zelfs als mensen me behoorlijk slecht behandelen.
46	X	De meeste dagen voel ik me blij en optimistisch.
47	E	Als iemand die ik ken ongelukkig is, voel ik zelf bijna diens pijn.
48	H	Ik zou niet graag willen dat mensen me behandelen alsof ik beter ben dan zij.
49	O	Als ik de gelegenheid had, zou ik graag een klassiek concert bijwonen.
50	C	Mensen maken vaak grappende opmerkingen over de puinhoop in mijn kamer of op mijn bureau.
51	A	Als iemand mij eens bedrogen heeft, zal ik altijd achterdochtig blijven.
52	X	Ik heb het gevoel dat ik een impopulair persoon ben.

No.	Factor	Dutch Item
53	E	Als het gaat om fysiek gevaar, ben ik een angsthaas.
54	H	Als ik iets van iemand wil, lach ik om diens slechtste grappen.
55	O	Ik zou erg verveeld raken van een boek over de geschiedenis van wetenschap en technologie.
56	C	Als ik een doel stel, komt het vaak voor dat ik het opgeef voordat ik het bereikt heb.
57	A	Ik heb de neiging andere mensen mild te beoordelen.
58	X	Als ik met andere mensen samen ben, ben ik vaak de woordvoerder van de groep.
59	E	Ik heb zelden of nooit slaapproblemen door stress of angst.
60	H	Ik zou nooit ingaan op een poging tot omkoping, zelfs niet als het om een erg hoog bedrag ging.
61	O	Mensen vertellen me vaak dat ik een levendige verbeelding heb.
62	C	Ik probeer altijd zo nauwkeurig mogelijk te werken, zelfs al kost het me extra tijd.
63	A	Als mensen mij vertellen dat ik het mis heb, is mijn eerste reactie dit aan te vechten.
64	X	Ik heb liever een baan waarin men veel met andere mensen omgaat dan één waarin men alleen dient te werken.
65	E	Wanneer ik over iets inzit, wil ik het liefst met iemand mijn zorgen delen.
66	H	Ik zou graag gezien worden terwijl ik rondrijd in een erg dure auto.
67	O	Ik vind mijzelf een enigszins excentriek persoon.
68	C	Ik laat me in mijn gedrag niet leiden door opwellingen.
69	A	De meeste mensen hebben de neiging sneller boos te worden dan ik.
70	X	Mensen vertellen me vaak dat ik wat vrolijker zou moeten zijn.
71	E	Ik raak erg geëmotioneerd als iemand die me na staat voor een lange tijd weg gaat.
72	H	Ik vind dat ik meer recht op respect heb dan de gemiddelde persoon.
73	O	Soms houd ik er van om gewoon naar de wind te kijken die door de bomen waait.
74	C	Ik haal me soms problemen op de hals omdat ik slordig ben.
75	A	Ik vind het moeilijk iemand volledig te vergeven die gemeen tegen mij is geweest.
76	X	Soms heb ik het gevoel dat ik een waardeloos persoon ben.
77	E	Zelfs in crisissituaties blijf ik rustig.
78	H	Ik zou niet net doen alsof ik iemand mag om te zorgen dat die persoon mij een dienst bewijst.
79	O	Ik heb nooit met veel plezier in een encyclopedie gekeken.
80	C	Ik verricht zo min mogelijk werk, maar net genoeg om rond te komen.
81	A	Zelfs als mensen veel fouten maken, zeg ik zelden iets negatiefs.

(continued)

No.	Factor	Dutch Item
82	X	Ik voel mijzelf niet erg op mijn gemak als ik voor een groep mensen sta te praten.
83	E	Ik word erg gespannen als ik moet wachten op een belangrijke beslissing.
84	H	Ik zou in de verleiding komen om vals geld te gebruiken als ik er zeker van was dat ik er mee weg zou komen.
85	O	Ik beschouw mezelf niet als een artistiek of creatief type.
86	C	Mensen noemen me vaak een perfectionist.
87	A	Ik vind het moeilijk compromissen te sluiten als ik denk dat ik gelijk heb.
88	X	Het eerste dat ik altijd doe als ik ergens nieuw ben, is vrienden maken.
89	E	Ik bespreek zelden mijn problemen met anderen.[g]
90	H	Ik zou veel plezier beleven aan het bezit van dure luxe goederen.[g]
91	O	Ik vind het saai om over filosofie te discussiëren.[g]
92	C	Ik doe liever dingen spontaan dan vast te houden aan een plan.
93	A	Ik vind het moeilijk niet boos te worden als mensen mij beledigen.
94	X	De meeste mensen zijn levenslustiger en dynamischer dan ik over het algemeen ben.
95	E	Ik raak niet snel geëmotioneerd, zelfs niet in situaties waarin anderen erg sentimenteel worden.
96	H	Ik wil dat mensen weten hoe belangrijk ik ben.
97	Al[h]	Ik leef mee met mensen die minder geluk hebben dan ik.
98	P[i]	Ik heb uitgewerkte plannen om dingen te verbeteren.
99	Al	Ik probeer gul te geven aan hulpbehoevenden.
100	P	Waar ik ook kom, ik zorg voor positieve veranderingen.
101	Al	Het zou me niets kunnen schelen om iemand die ik niet mag kwaad te doen.
102	P	Als ik iets wil, dan komt het voor elkaar.
103	Al	Mensen vinden mij hardvochtig.
104	P	Anderen nemen vaker dan ik de leiding bij nieuwe plannen.

[a]Item measuring openness to experience. [b]Item measuring conscientiousness. [c]Item measuring agreeableness. [d]Item measuring extraversion. [e]Item measuring emotionality. [f]Item measuring honesty-humility. [g]Item not used in the main study due to human error. [h]Item measuring altruism; data not used in this research. [i]Item measuring proactivity.

Appendix 3.
Ex-ante Responsibility Facet Scale

Name	High score	Low score
Moral Responsibility (N= 11)	A person with a high score will be more likely to care for the effects of the role, task position, and consequences on the general environment in a social, cultural, and/or biological context.	A person with a low score will be less likely to care for the effects of the role, task position and consequences on the general environment in a social, cultural, and/or biological context.
Social Responsibility (N=11)	A person with a high score will be more likely to care if the role, task, or position will impact the social cohesion, the amount of conflicts, or the general social well-being between all people involved.	A person with a low score will be less likely to care if the role, task, or position will impact the social cohesion, the amount of conflicts, or the general social well-being between all people involved.
Task Responsibility (N=11)	A person with a high score will be more likely to take tasks, roles and positional obligations upon themselves in the context of the rules and regulations that are attached to the tasks, roles, and position.	A person with a low score will be less likely to take tasks, roles, and positional obligations upon themselves in the context of the rules and regulations that are attached to the tasks, roles and position.

Appendix 4.

HEXACO operationalization and scoring

	High score	Low score
Honesty-Humility (N = 15)	Persons with very high scores on the Honesty-Humility scale avoid manipulating others for personal gain, feel little temptation to break rules, are uninterested in lavish wealth and luxuries, and feel no special entitlement to elevated social status.	persons with very low scores on this scale will flatter others to get what they want, are inclined to break rules for personal profit, are motivated by material gain, and feel a strong sense of self-importance.
Emotionality (N = 15)	Persons with very high scores on the Emotionality scale experience fear of physical dangers, experience anxiety in response to life's stresses, feel a need for emotional support from others, and feel empathy and sentimental attachments with others.	persons with very low scores on this scale are not deterred by the prospect of physical harm, feel little worry even in stressful situations, have little need to share their concerns with others, and feel emotionally detached from others.
Extraversion (N = 16)	Persons with very high scores on the Extraversion scale feel positively about themselves, feel confident when leading or addressing groups of people, enjoy social gatherings and interactions, and experience positive feelings of enthusiasm and energy.	Persons with very low scores on this scale consider themselves unpopular, feel awkward when they are the centre of social attention, are indifferent to social activities, and feel less lively and optimistic than others do.
Agreeableness (N = 16)	Persons with very high scores on the Agreeableness scale forgive the wrongs that they suffered, are lenient in judging others, are willing to compromise and cooperate with others, and can easily control their temper.	Persons with very low scores on this scale hold grudges against those who have harmed them, are rather critical of others' shortcomings, are stubborn in defending their point of view, and feel anger readily in response to mistreatment.

(continued)

	High score	Low score
Conscientiousness (N = 16)	Persons with very high scores on the Conscientiousness scale organize their time and their physical surroundings, work in a disciplined way toward their goals, strive for accuracy and perfection in their tasks, and deliberate carefully when making decisions.	persons with very low scores on this scale tend to be unconcerned with orderly surroundings or schedules, avoid difficult tasks or challenging goals, are satisfied with work that contains some errors, and make decisions on impulse or with little reflection.
Openness to Experience (N = 15)	Persons with very high scores on the Openness to Experience scale become absorbed in the beauty of art and nature, are inquisitive about various domains of knowledge, use their imagination freely in everyday life, and take an interest in unusual ideas or people.	Persons with very low scores on this scale are rather unimpressed by most works of art, feel little intellectual curiosity, avoid creative pursuits, and feel little attraction toward ideas that may seem radical or unconventional

(Kibeom Lee, 2009)

Appendix 5.

Correlation Bases Ex-ante Responsibility Items (N=100)

	M1	M3	M4	M5	M7	M8	M12	M13	M14	M16	M17	T1	T2	T5	T6	T7	T9
M1	-																
M3	.48**	-															
M4	.14	.19	-														
M5	.40**	.47**	.36**	-													
M7	.32**	.36**	.24*	.26**	-												
M8	.19*	.23*	.30**	.22*	.27**	-											
M12	.06	.21*	.26**	.23*	.04	.15	-										
M13	.07	.14	.31**	.39**	.19*	.19	.18	-									
M14	.13	.18	.21*	.35**	.09	.11	.26**	.29**	-								
M16	.43**	.36**	.31**	.41**	.38**	.26**	.08	.23*	.22*	-							
M17	.24*	.40**	.27**	.24*	.41**	.01	.22*	.27**	.29**	.37**	-						
T1	-.18	-.05	.18	-.08	-.02	.03	.04	.12	-.07	-.03	.05	-					
T2	-.03	.01	.03	.12	.04	.03	.25**	.02	.20*	-.03	.13	.05	-				
T5	-.04	.08	.08	.00	-.05	.14	.02	.08	.03	-.16	-.07	.47**	.17	-			
T6	-.11	.13	.19	.14	.14	.35**	.18	.25**	.01	-.02	.07	.34**	.21*	.22*	-		
T7	-.19	-.08	.17	.05	-.09	.11	-.01	.04	.01	-.19	-.16	.57**	.06	.53**	.38**	-	
T9	-.05	.12	.19	.08	-.09	-.02	.01	-.01	-.11	.07	.05	-.15	-.05	-.18	-.07	-.08	-
T10	-.13	-.08	.07	.00	.05	.13	.04	.08	.09	-.03	-.05	.51**	.22*	.44**	.26**	.60**	-.16
T11	.03	-.00	.28**	.06	-.03	.08	.27**	.22*	.14	-.17	.08	.29**	.10	.33**	.02	.19*	-.14

(continued)

	M1	M3	M4	M5	M7	M8	M12	M13	M14	M16	M17	T1	T2	T5	T6	T7	T9
T15	-.19	.05	.02	-.09	-.12	.04	.11	.06	.07	-.03	.00	.27**	.03	.18	.16	.14	-.10
T16	.12	.32**	.10	.15	.31**	.18	.13	.24*	.02	.12	.31**	.02	.07	.19	.27**	-.05	-.13
T17	.11	.20*	.10	.09	.20*	.02	.34**	.19*	-.05	.12	.31**	.20	.23*	.17	.16	.14	-.06
S1	.03	.27**	.14	.35**	.10	.19	.41**	.18	.44**	.09	.15	-.15	.28**	-.04	.13	-.02	-.05
S2	.11	.20*	.13	.32**	.38**	.06	-.10	.24*	.12	.12	.11	.04	.13	.00	.40**	.09	-.18
S3	.21*	.22*	.03	.20*	.10	.06	-.03	.09	.16	.10	-.06	-.06	.04	.09	.16	.07	-.17
S5	-.07	-.04	.10	.04	.07	-.05	-.13	.00	.06	-.02	-.06	.25*	-.15	.22*	.06	.27**	.01
S10	.03	.07	.03	-.02	-.01	-.06	.05	-.08	.06	-.01	.07	.07	.03	.01	.03	.14	.00
S12	.08	.24*	.32**	.39**	.19*	.33**	.14	.12	.24*	.11	.08	.06	.15	.03	.31**	.14	.04
S13	.20*	.18	-.00	.10	.06	.13	-.13	.00	.03	.18	.05	-.03	-.09	-.07	-.08	-.09	-.03
S14	.20*	.14	.12	.18	.13	.11	.10	.20*	.06	.21*	.16	-.06	.17	-.12	.17	.02	.08
S15	-.23*	-.02	.26**	.03	-.08	-.04	.16	.19	.19	-.14	.12	.40**	.13	.30**	.22*	.40**	-.06
S16	.13	.06	.11	.19	.16	.04	.03	.20	.14	.03	.09	.13	.27**	.23*	.27**	.20	-.13
S18	.12	-.03	-.18	-.10	.02	-.07	-.12	.06	-.15	.09	.15	-.20*	.10	-.21*	-.07	-.20*	-.16

*p < .05. **p < .01.

	T10	T11	T15	T16	T17	S1	S2	S3	S5	S10	S12	S13	S14	S15	S16	S18
M1																
M3																
M4																
M5																
M7																
M8																
M12																
M13																
M14																
M16																
M17																
T1																
T2																
T5																
T6																
T7																
T9																
T10	-															
T11	.27**	-														
T15	.36**	.13	-													
T16	.02	.07	.02	-												

	T10	T11	T15	T16	T17	S1	S2	S3	S5	S10	S12	S13	S14	S15	S16	S18
T17	.23*	.17	.18	.13	-											
S1	.05	.05	.19*	.17	.17	-										
S2	.03	-.09	-.08	.18	.15	.33**	-									
S3	.20*	.06	.19	.15	.06	.34**	.33**	-								
S5	.29**	.03	.07	-.07	.07	-.12	-.10	.08	-							
S10	.00	.05	.21*	.03	.08	-.04	-.18	.04	.01	-						
S12	.04	.02	-.03	.23*	-.07	.40**	.42**	.17	-.10	-.18	-					
S13	-.12	-.09	-.14	.12	-.10	-.04	.09	-.06	-.02	-.18	.02	-				
S14	-.08	.00	.05	.14	-.01	.29**	.31**	.31**	-.25*	-.03	.26**	.02	-			
S15	.26**	.13	.18	.11	.08	.02	.00	.08	.36**	.01	.07	-.07	-.03	-		
S16	.19	.07	.15	.25**	.18	.17	.35**	.25**	-.02	.07	.22*	-.12	.29**	.25*	-	
S18	-.20*	-.12	-.06	.07	.10	.00	.27**	.12	-.41**	.02	-.05	.02	.35**	-.10	.12	-

*p < .05. **p < .01.