

The relationship between daily perceived unfairness and daily work embitterment among app workers both directly and indirectly explained via daily psychological contract breach

Moral identity as moderator

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Abstract

Food app workers sometimes experience unfair events, which affects their state of mind and causes them to feel embittered at work. This master's thesis assessed the relationship between daily perceived unfairness and daily work embitterment. To ascertain this relationship, daily psychological contract breach is included as a mediator and moral identity as a moderator. By conducting a diary study that included a general online survey and four diary questionnaires, 42 food app workers were surveyed in an attempt to explore these relationships. Multilevel analyses showed that there was indeed a direct relationship between daily perceived unfairness and daily work embitterment, meaning that food app workers who experience unfairness in the workplace on a particular day will feel embittered that day. The moderator (i.e., moral identity) and mediator (i.e., psychological contract breach), however, did not reach significance. Since daily perceived unfairness causes daily work embitterment, app providers should pay attention to issues of unfairness.

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1 Introduction

Few people would deny that they have never noticed food app workers at, for instance, McDonalds. The world of work is gradually changing to one where people use apps to sell their labor and a new world of work has emerged (Ashford, Caza, & Reid, 2018; Wood, Graham, Lehdonvirta, & Hjorth, 2018). App work is part of this new world of work, where individuals are essentially employed by an application, driven by algorithmic management. Through this application, app workers perform regular activities as if they would have done so directly for the business owner (De Stefano, 2016; Duggan, Sherman, Carbery, & McDonnell, 2019). Algorithmic management alludes to an algorithm that decides daily which food app worker gets what ride, and thus performs typical HR processes (e.g., work assignments and performance management) with no face-to-face interaction required (Duggan et al., 2019). Now more than ever, algorithms are used to make daily decisions that were originally taken by human managers. It is clear that algorithmic management is associated with several benefits, for example, recruiters can use LinkedIn Recruiter, which is a hiring platform based on algorithms and screens promising candidates for the job daily (Almalis, Tsihrintzis, Karagiannis, & Strati, 2015; Guo, 2019; Lee, 2018). Through this platform the recruiters get a list with the details of the most promising candidates, allowing them to contact them (Guo, 2019).

Less clear, however, is whether decisions made by algorithms are fair. Some argue that daily decisions made by algorithms are considered to be fairer because these decisions are based on objective data and are not influenced by human bias (Gal, Jensen, & Stein, 2020). However, there is ambiguity whether algorithmic management is perceived as fair or unfair. Scholars have already shown that algorithmic decisions are considered to be less fair, for instance, the research by Lee (2018) has revealed that workers at Amazon Mechanical Turk perceive that algorithms only take into account the end result but not the process behind it (e.g., the number of hours they worked on it, the travel times...), which is judged to be unfair. Overall, employees experience algorithmic decisions as less fair and less reliable and it can even evoke negative emotions when an algorithm makes decisions of which employees think unique human skills are needed (e.g., making a good schedule) (Lee, 2018). These findings were supported by Newman, Fast, and Harmon (2020) in that employees perceive decisions (e.g., layoffs and promotions) made by algorithms as less fair than those made by human managers. Furthermore, Deng, Joshi, and Galliers (2016) added that "There's no place for us to be heard if we're taken advantage of or treated unfairly. We're many and invisible, and easily replaced. So, we're ignored." (P. 279). In short, although algorithmic management is expected to be fair, previous studies have shown that algorithmic management is perceived as unfair. Therefore, we argue that further research on whether algorithmic management is perceived as (un)fair by workers is needed.

Investigating whether the daily decisions made by the algorithm is perceived as (un)fair by workers is important since unfairness could lower the performances, job satisfaction, and commitment towards the organization (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Fujishiro, 2005; Holtz & Harold, 2013; Michailidis & Crompton, 2018). Unfairness is a more global perception of whether one acts unfairly or discriminates and thus violates a standard of behavior (Rodell & Colquitt, 2015; Colquitt & Zipay, 2015). Many people work under the credo "a fair day's pay for a fair day's work", which represents the importance of fairness on the work floor (Fujishiro, 2005). Indeed, the literature has investigated and found a positive relationship between unfairness and an increase in absenteeism, turnover, psychiatric disorders, and other negative feelings but as well as a decrease in involvement (Fujishiro, 2005; Newman et al., 2020).

Looking at daily perceived unfairness through the lens of Social Exchange Theory (Homans, 1958), we argue, that people tend to balance the exchanges (i.e., giving and receiving)

(Cropanzano & Mitchell, 2016; Homans, 1958). As stated by this theory, a relationship between two people is built on a kind of cost-benefit analysis: when people give a lot to others, they try to get a lot back. The opposite direction applies as well: people who receive a lot from others feel pressured to give as much in return. Furthermore, the contrary is correct as well: giving little to others results in receiving little in return (Homans, 1958; Liu, He, Jiang, Ji, & Zhai, 2020; Tulane University, 2020). Furthermore, according to the Social Exchange Theory, unfairness occurs when the organization fails to fulfill the norms of reciprocating, and thus the employees do not receive something in return for their performances (Birtch et al., 2016; Cropanzano & Mitchell, 2016; Sensky, 2010). Since social exchange and reciprocity are the basis of psychological contracts, not fulfilling the norm of reciprocating results in psychological contract breach (Birtch et al., 2016; Sensky, 2010). The latter one indicates a discrepancy between expectations and reality (Liu et al., 2020). Subsequently, a psychological contract breach is caused by an unfair event (Bal et al., 2007). In extreme cases, psychological contract breach can result in revenge, sabotage, theft, or aggressive behavior, which are features of work embitterment (i.e., work embitterment is the feeling of being abandoned and insulted) (Linden, 2003; Morrison & Robinson, 1997).

The purpose of this study is to fill the above-mentioned research gaps by investigating how daily perceived unfairness is negatively related to daily work embitterment both directly and indirectly via daily psychological contract breach. Besides, this study looks at the moderating role of moral identity in the relationship between daily perceived unfairness and daily psychological contract breach. It is expected that people with a high moral identity will strengthen this relationship because moral identity influences certain views, attitudes, and behaviors (He, Zhu, & Zheng, 2014; Proost, Pavlinská, Baillien, Brebels, & Van den Broeck, 2013; Reed, & Aquino, 2003; Rupp, Shao, Thornton, & Skarlicki, 2013). Therefore, app workers with a high moral identity are more likely to react to perceived unfairness. To this aim, the research question is as follows: "Is daily perceived unfairness among app workers related to daily work embitterment both directly and indirectly via psychological contract?" A general questionnaire and a four-day diary study via an internet survey among food app workers in Belgium was conducted in order to investigate the above-expected relations.

In accomplishing this, the study makes some contributions to the existing literature regarding antecedents of work embitterment among food app workers. First, to date, research already investigated how perceived unfairness is linked to work embitterment (e.g., Sensky, Salimu, Ballard, & Pereira, 2015 and Michailidis & Cropley 2017), though these studies were never conducted among app workers and never in a daily context. Since the algorithm decides daily which food app worker gets which order, it is important to measure the variables on a daily level. One day the food app worker may perceive the orders as fairly distributed but the next day as unfairly distributed. Finally, in the literature, there is an ambiguity about whether an algorithm is perceived as fair or unfair. Algorithmic decisions are indeed based on objective data, which is perceived as fair (Gal et al., 2020). However, according to other research, workers perceive algorithms as unfair (Deng, Joshi, & Galliers, 2016; Lee, 2018; Newman et al., 2020). Thus, this master's thesis examines which assumption is true.

The first part of this study comprises a thorough literature study that explains the central concepts (i.e., daily perceived unfairness, daily psychological contract breach, daily work embitterment, and moral identity), followed by a proposition of the different relationships between the variables. The second part of this study explains the methodology, which includes how the respondents were found and what measurement tools were used to test the variables. The next section outlines the results obtained from the analyses. Finally, in the discussion, the main findings, limitations, and implications for practice are discussed.

2 Literature study and hypotheses

The literature review examines the following concepts in detail: daily perceived unfairness, daily psychological breach of contract, and daily work embitterment. In addition, the possible relationships between these concepts are discussed and an explanation of why these relationships are expected is provided. Afterward, the moderating role of moral identity is enlightened. Finally, the various hypotheses are schematically framed.

2.1 Daily perceived (un)fairness

The central theme of this thesis is unfairness, however, in the literature the concepts 'justice' and 'fairness' are often used interchangeably and seen as synonyms, though this is not the case (Colquitt & Zipay, 2015). Justice is defined as the perceived compliance with rules that reflect adequacy in the context of decision-making, it is the allocation of normatively correct outcomes in a morally appropriate manner (Rodell & Colquitt, 2015; Colquitt & Zipay, 2015; Cropanzano & Ambrose, 2015). Whereas fairness is a general perception of appropriateness and denotes a person's perception that a decision, outcome, or procedure is both balanced and correct (Rodell & Colquitt, 2015; Colquitt & Zipay, 2015; Husted & Folger, 2004). Unfairness, on the contrary, is the feeling that someone has violated a standard of behavior (Rodell & Colquitt, 2015; Colquitt & Zipay, 2015). Hereafter the different forms of justice are discussed in greater depth, as fairness is the holistic feeling of the different forms of justice.

Applied to an organizational context, the literature on justice generally conceptualizes justice as the whole of three distinct dimensions: distributive justice, procedural justice, and interactional justice (Ambrose & Schminke, 2009; Colquitt, 2001; Fujishiro, 2005). Some researchers recognize the existence of a fourth dimension in the justice construct, namely informational justice (Colquitt, 2001; Kernan & Hanges, 2002). However, since the three-dimensional justice construct is still the most common in justice literature, we also use this construct in this study (Fujishiro, 2005). The first type of organizational justice is *distributive justice*, which is the perceived injustice of the distribution of positive and negative outcomes (Colquitt, 2001). In particular, distributive justice argues that organizations should strive to distribute resources in conformity with the objectives, for instance maximizing productivity, in such a way that the distribution is seen as fair or equitable (Colquitt, 2001; Cropanzano, Bowen, & Gilliland, 2007; Marescaux, De Winne, & Sels, 2015). According to Adam's (1965) equity theory, people compare input-to-output with that of their fellow humans (Cropanzano et al., 2007; Fujishiro, 2005; Marescaux et al., 2015). The input is, for example, intelligence, education, and effort whereas the output is pay and other kinds of benefits. If the input-output balance is disturbed, it creates a feeling of unfairness (Adams, 1965; Cowherd & Levine, 1992). Suppose, for example, that employee A gets one day off per month worked, as opposed to employee B who gets one and a half days off. Employee A feels unfairly treated because the input (i.e., the number of hours worked) is the same, but the outcomes, in this case day off, are different (Maxham & Netemeyer, 2018). When employees perceive to be disadvantaged (i.e., undercompensation) this will result in working less hard to restore the balance. On the contrary, when employees receive more than the reference other (i.e., overcompensation) they will work harder because they feel guilty (Blakely, Andrews, & Moorman, 2005; Cowherd & Levine, 1992; Fujishiro, 2005). In this way, they reduce unfairness by changing either the input or the output (Fujishiro, 2005; Greenberg, 2016).

Procedural justice, the second type, does not relate specifically to the results themselves, but to how the decision was made (Cropanzano et al., 2007; Greenberg, 1990; Maxham & Netemeyer, 2018; Zainalipour, Fini, & Mirkamali, 2010). Leventhal (1980) set out some rules that are important

in fair decision-making processes. A fair process is consistently applicable for everyone, where there is no bias, accurate information must be provided, the opinions of representatives are taken into account, and finally, the procedures correspond to the standards of ethics or morality. In case of incorrect inaccurate decisions, there is a mechanism to correct this (Cropanzano, Bowen & Gilliland, 2007; Fujishiro, 2005; Leventhal, 1980).

Bies and Moag (1986) introduced a third type of organizational justice, in particular, *interactional justice* (Bies, 2001; Kernan & Hanges, 2002). Interactional justice captures the treatment (i.e., with dignity, politely and respectfully) that employees receive and how much they are informed (Colquitt, 2001; Fujishiro, 2005; Holtz & Harold, 2013; Johnson, Lanaj, & Barnes, 2014). Respect and propriety are the basis for interactional justice, the former one refers to the sincerity and dignity with the other and the latter one alludes to using appropriate language (Fujishiro, 2005; Johnson et al., 2014).

Studies show the importance of organizational justice, in particular, it increases job satisfaction, organizational involvement, and organizational citizenship behavior (i.e., OCB) on the one hand and reduces employee withdrawal behavior and counterproductive work behavior on the other hand (Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Holtz & Harold, 2013). These relationships were gauged through a meta-analysis (i.e., analyzing previously conducted studies).

Applying this to food app workers, it can be said that the perception of unfairness can fluctuate from day to day since the algorithm is daily making decisions regarding which food app-worker gets which ride. Previous research has shown that fairness is a changeable aspect of the work environment (Cojuharenco & Patient, 2013; Judge, Scott, & Ilies, 2006; Robbins, Ford, & Tetrick, 2012). A possible explanation for why fairness considerations may fluctuate is the situation: for example, distributive justice becomes more important in a situation where the material aspect has importance (e.g., is the level of pay fair considering the orders I received?). Therefore, on days where food app workers perceive the level of pay as unfair considering the orders they got, they perceive more distributive injustice. Interactional justice becomes more important when food app workers interact with the app (Cojuharenco & Patient, 2013). On days where food app workers feel that they are unfairly treated by the app, they will perceive interactional injustice. Similarly, getting adequate clarification is rendered less meaningful when the outcome can be better understood and assessed, than immediately after an event, when the fairness of the outcome may still be precarious (Cojuharenco & Patient, 2013; Holtz & Harold, 2009). In conclusion, we can argue that perceived unfairness can vary from day to day depending on how food app workers perceive distributive, procedural, and interactional justice that day.

2.2 Daily work embitterment

One of the possible outcomes of perceived unfairness is embitterment, and more specifically work embitterment since most of the events that are at the root of embitterment are work-related. (Linden, Baumann, Rotter, & Schippan, 2008; Linden & Maercker, 2011; Michailidis & Cropley, 2018; Michailidis, 2017; Muschalla & Linden, 2011; Sensky, 2010). Hence, the focus of this study is on embitterment in a daily work context, in particular daily work embitterment. Although the latter one has not yet been concretely defined, empirical research describes work embitterment as embitterment at the workplace (Michailidis & Cropley, 2019; Muschalla & Linden, 2011; Sensky, 2010). Embitterment can be best understood as an emotional response resulting from injustice, insult, or breach of trust. It is a gnawing negative emotion, for which people perceive the bitter feeling of being mistreated and wronged (Linden & Maercker, 2011; Nanni, Caruso, Sabato, & Grassi, 2018; Sensky, Salimu, Ballard, & Pereira, 2015; Znoj, Abegglen, Buchkremer, & Linden, 2016). Applied to the work context, work embitterment can be described as a reactive emotion towards an unfair event in the workplace. Employees acknowledge this event and see it as a

negative state, which leads to embitterment. Due to being constantly reminded of the event the employee feels humiliated and offended and therefore wants revenge (Linden, 2003; Linden & Maercker, 2011; Michailidis, 2017; Michailidis & Cropley, 2018; Nanni et al., 2018).

Research empirically investigated the outcomes of work embitterment and found that work embitterment was negatively related to several well-being and performance outcomes of employees (Muschalla & Linden, 2011). In particular, work embitterment resulted in heightened levels of insomnia (Greenberg, 2006), rumination preventing employees from sufficiently resting between shifts (Michailidis & Cropley, 2018), and absence due to illness (Head et al, 2007).

2.3 Relationship between daily perceived unfairness and daily work embitterment

The first hypothesis in this study proposes that daily perceived unfairness leads to daily work embitterment. As pointed out earlier, embitterment is triggered by an unfair occurrence, and scientific literature yields evidence that the main driver of work embitterment is organizational injustice, for instance as a result of racism, sexual inequality, and unfair promotion rules, which, in turn, results in perceiving unfairness (Linden, 2003; Michailidis, 2017; Michailidis & Cropley, 2016; Muschalla & Linden, 2011; Sensky, 2010). Since this master's thesis focuses on the three dimensions of organizational justice (i.e., distributive, procedural, and interpersonal justice) these are discussed separately concerning daily work embitterment.

First, we expect a positive relationship between daily distributive injustice and daily work embitterment. A longitudinal study by Michailidis (2017) found that distributive injustice predicts work embitterment because embittered employees feel that the distribution of outcomes (e.g., pay, office space, etc.) are unfair. This is additionally illustrated in the study by Deng, Joshi, and Galliers (2016) indicating that crowd workers feel it is important that they are paid the amount they deserve. This stipulates that crowd workers are concerned about the fairness of the outcomes and perceive distributive injustice since the outcome, in this case, payment is not fair. Applied to app-workers, we argue that daily distributive injustice might cause daily work embitterment.

Next, Sensky, Salimu, Ballard, and Pereira (2015) examined the relationship between procedural justice and work embitterment and found that embittered employees consider that their organization shows poor procedural justice, which implies that procedural justice could lead to work embitterment. An explanation for this observation is that being able to express your opinion is seen as an important characteristic of a fair process (Leventhal, 1980). Embittered workers try to convince their colleagues that they have been mistreated and when they fail to convince them, this can lead to experiencing procedural injustice (Sensky, Salimu, Ballard & Pereira, 2015). Furthermore, Verelst, Lemmens, De Cooman, and Verbruggen (2020) discovered that app workers question the fairness of the algorithm since colleagues sometimes get more orders. As a result, they wonder if other food app workers get privileges. Combining the two aforementioned studies, we argue that daily procedural injustice might lead to daily work embitterment.

Lastly, Michailidis (2017) states that interactional justice is negatively related to work embitterment, which means that the cause of embitterment is that employees feel disrespected and not treated with dignity. Applying the foregoing to app workers, scholars reveal that app workers experience organizational injustice, particularly they sometimes feel treated as slaves, disrespected and believe that the organizations only care about the customers and where the money comes from and not about their riders (Deng, Joshi, & Galliers, 2016; Lee, 2018; Verelst, Lemmens, De Cooman, & Verbruggen, 2020). Therefore, daily interactional injustice might cause daily work embitterment.

In conclusion, given that previous research found that food app workers might perceive daily organizational unfairness and given the evidence of a link between daily unfairness and daily work embitterment, we expect that daily perceived unfairness is positively related to daily work embitterment. Hence, the following hypothesis is expected to be true:

Hypothesis 1: *Daily perceived unfairness is positively related to daily work embitterment.*

2.4 The mediating role of daily psychological contract breach

Psychological contract breach is defined as the failure to keep the employer's promises obligations and not honoring the terms of the psychological contract (Anggraeni, 2018; Cassar & Buttigieg, 2015; Rousseau, 1989; Liu et al., 2020). A psychological contract refers to an implicit contract containing a person's beliefs regarding the terms of a mutual exchange agreement between the organization and food app-worker. Thus, the food app workers know what is expected (e.g., do a certain job) and what they get in return (e.g., pay) (Braganza, Chena, Canhotoa, & Sapb, 2020; Rousseau, 1989; Sensky, 2008; Suazo, Turnley, & Mai-Dalton, 2005; Liu, He, Jiang, Ji, Zhai, 2020). Furthermore, psychological contract breach is negatively related to involvement, work performance, and confidence in their work because employees feel disappointed and the trust between employer and employee is violated (Braganza et al., 2020; Cassar & Buttigieg, 2015).

According to the literature two types of psychological contracts can be distinguished: transactional and relational contract breach (Braganza et al., 2020; Griep & Vantilborgh, 2018). First, *transactional contracts* are computational in nature and focus on short-term relationships through their focus on the exchange of economic or materialistic incentives (e.g., people work to get paid, career opportunities, job security). Incentives are specific and perceptible and include, for example, the promise of a promotion or higher pay. As such, these contracts reflect a monetary exchange for specific task and do not focus on long-term relationships and workers only perform their jobs for which they are paid (Braganza et al., 2020; Cassar & Buttigieg, 2015; Griep & Vantilborgh, 2018; Montes & Irving, 2008; Liu et al., 2020).

Second and last, *relational contracts* revolve around intangible grounds, such as developmental opportunities, personal support, and work-related training (Braganza et al., 2020; Cassar & Buttigieg, 2015; Montes & Irving, 2008). These contracts refer to a long-term relationship between employer and employee, where trust, respect, and loyalty that develop over time are at the heart (Braganza et al., 2020; Montes & Irving, 2008; Griep & Vantilborgh, 2018).

Next to explaining the two types of psychological contract, it is important to address that since the algorithm makes decisions daily, we should measure psychological contract breach on a daily level as well. Measuring psychological contract breach on a daily basis gained importance in the study by Conway and Briner (2002). They note that psychological contracts may continually be renegotiated and can be broken from day to day. Thus, these contracts are an exchange process that unfolds daily. Furthermore, they emphasize the importance of daily measurement of psychological contract breach to comprehend daily fluctuations in mood and emotions.

In the subsequent part, the mediating role of psychological breach of contract is explained. The relationship between daily perceived unfairness and daily work embitterment might be indirectly explained via daily psychological contract breach. First, the relationship between daily perceived unfairness and daily psychological contract breach is enlightened and is followed by clarifying the relationship between daily psychological contract breach and daily work embitterment. The former relationship is explained using the Social Exchange Theory (Homans, 1958). According to this theory, individuals interact with others because they believe in the expectations of receiving

incentives in return. Social exchange refers to interacting with two parties, for instance, organization and food app-worker (Bal et al., 2007; Cropanzano & Mitchell, 2005). Each party is obliged to act according to the norms of reciprocating (Anggraeni, 2018; Bal et al., 2007; Cropanzano & Mitchell, 2005). When the organization fails to do so and thus is unwilling to reciprocate in the exchange obligation, this is perceived by food app workers as unfair treatment, which in turn leads to psychological breach of contract (Bal et al., 2007; Cropanzano & Mitchell, 2005). Social exchanges and reciprocity are the basis of a psychological contract and thus play an important role, i.e., if employees perform better, they expect more in return (Birtch et al., 2016; Sensky, 2010). In conclusion, not receiving anything in return from the organization, and being treated unfair will therefore result in psychological contract breach (Bal et al., 2007).

In conclusion, daily perceived unfairness might lead to daily psychological contract breach. However, depending on the type of contract (i.e., transactional and relational) the reaction of food app workers will not always be the same. It is expected that daily perceived unfairness causes a stronger reaction from food app workers who value relational contracts more, since previous research suggests that workers react stronger when their commitment towards the organization is stronger (Brockner, Tyler, & Cooper-Schneider, 1992; Raja, Johns, & Bilgrami, 2011). Given that relational contracts are based on trust, respect, and loyalty and are long-term oriented, we argue that the commitment in this kind of contract is greater than in rational contracts.

In what follows the second relationship, more precisely the relationship between daily psychological contract breach and daily work embitterment is discussed. The knowledge regarding this relationship is still in its infancy, but according to previous empirical studies, psychological contract breach harms the food app workers' trust in their organization, which affects the food app workers' job attitudes and job performance, such as withdrawal and commitment to the organization. This makes food app workers feel frustrated since they take a psychological contract breach personal (Bal et al., 2007; Nimmo, 2018; Sensky, 2010). Frustrations are one of the most important antecedents of work embitterment, and thus we argue that psychological contract breach could lead to work embitterment. Furthermore, since both psychological contract breach and work embitterment are caused by an unfair event, we argue that an imbalance in social exchanges, and thus psychological contract breach, could result in work embitterment (Linden, 2003; Linden & Maercker, 2011; Michailidis, 2017; Michailidis & Cropley, 2018).

Based on the above theories, daily psychological contract breach may explain the relationship between daily perceived unfairness and daily work embitterment. Since food app workers not only look at the breach of contract itself but also wonder why it occurred, perceiving daily psychological contract breach may thus depend on the daily perception of unfairness (Cassar & Buttigieg, 2015). Furthermore, perceived unfairness is seen as an unfair event, which is at the root of psychological breach of contract, and therefore leads to daily work embitterment. Keeping this in mind, we propose the following hypothesis:

Hypothesis 2: Daily psychological contract breach mediates the relationship between daily perceived unfairness and daily work embitterment.

2.5 Moral identity as a moderator

In this master's thesis moral identity is considered as a moderator in the relationship between daily perceived unfairness and daily psychological contract breach. Moral identity refers to the extent to which being moral is important to the identity of the individual (Hardy & Carlo, 2011; Hardy, Walker, Olsen, Woodbury, & Hickman, 2014). Furthermore, moral identity can be seen as self-awareness and can be linked to moral qualities (e.g., friendly, honest, caring), but also to the thinking, feeling, and acting of the individual (Aquino & Reed, 2002; He et al., 2014). In general, moral identity is considered to be a specific type of self-regulating mechanism that motivates moral action (Blasi, 1980; Brebels, De Cremer, Van Dijke, & Van Hiel, 2010). Blasi (1980) explains the self-regulating effect of moral identity by stating that an individual feels obliged to engage in moral action because it is related to the desire to maintain self-consistency (i.e., the need to regulate thoughts and ideas in such a way that it maintains consistency and thus keeps true to oneself.) (Blasi, 1980; Brebels et al., 2010).

In particular, the focus of this research is on moral identity influencing individuals' views and perceptions of daily unfairness and moderating these views. Proost, Pavlinská, Baillien, Brebels, and Van den Broeck (2013) investigated the relationship between moral identity and perceived unfairness and found that not all employees react equally strongly to unfair treatment. In particular, they found that employees with a high moral identity are more sensitive to fair treatment. Therefore, they will be more engaged to prevent amoral or less moral behavior in the company, meaning that they will be less resilient to unfair treatment (Proost et al., 2013; Skarlicki, van Jaarsveld, & Walker, 2008).

Applied to food app workers, we argue that food app workers high on moral identity will react stronger to daily perceived unfairness leading to a daily psychological contract breach, because they are more likely to react to daily perceived unfairness (Reed & Aquino, 2003; Rupp et al., 2013). In contrast, food app workers low in moral identity care less about fairness, ethics, and morality (Rupp et al., 2013; Skarlicki et al., 2008). Given that moral identity influences the food app workers' moral action, we believe that moral identity influences the view on perceiving unfairness in that the food app workers want to remain true to themselves and food app workers high on moral identity are more sensitive to perceived unfairness. In line with this reasoning, we argue that moral identity is likely to influence employees' views on psychological contract breach. Hence, food app workers high in moral identity will be more likely to perceive unfairness which leads to psychological contract breach, and food app workers low in moral identity will be less likely to perceive unfairness.

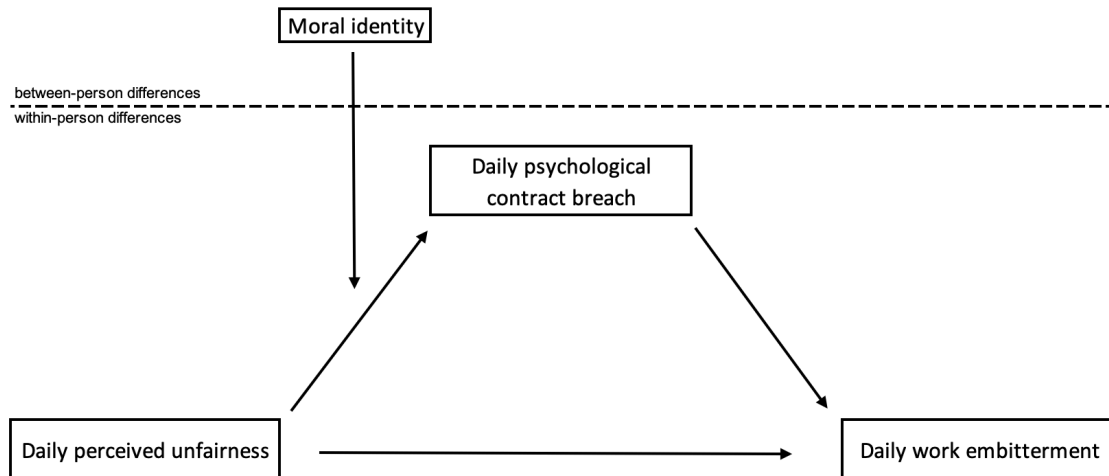
Based on the statements above, we argue that moral identity might moderate the relationship between daily perceived unfairness and daily psychological contract breach. Although to date this hypothesis was not examined yet, scholars already showed that moral identity influences the views of individuals (Aquino & Reed, 2002; Proost et al., 2013; He et al., 2014), and therefore hypothesis 3 is proposed:

Hypothesis 3: *Moral identity moderates the relationship between daily perceived unfairness and daily psychological contract breach such that this relationship is more positive for food app workers high on moral identity.*

2.6 Conceptual framework

In Figure 1, the different hypotheses are presented schematically. First, the relationship between daily perceived unfairness and daily work embitterment is examined. Next, the mediating role of daily psychological contract breach in this relationship is explored. And finally, moral identity is assumed to act as a moderator in the relationship between daily perceived unfairness and daily psychological contract breach.

Figure 1 Conceptual framework



3 Methodology

To test the hypotheses established in this master's thesis, quantitative research was conducted. In what follows the participants and procedures are clarified, followed by the various measuring instruments, and finally, the analysis of the data is briefly explained.

3.1 Participants and procedure

Belgian food app workers (i.e., Deliveroo, Uber Eats, and Takeaway riders), who are over 18 years old and work a minimum of 12 hours per week were searched within our professional network (i.e., LinkedIn), by adding ourselves in Facebook groups of app workers and by addressing them on the street and informing them about the study. In this way, the food app workers were asked if they wanted to participate in this research and if they knew other workers who wanted to participate as well. This way of working is called snowball sampling, which means that once someone has been found, they might know other people who want to participate in this study as well. Those who agreed to participate were instructed to complete a general questionnaire and a four-day diary study via the online survey software Qualtrics. On the 9th of March 2021, the general questionnaire was sent out and includes the demographics (e.g., first name, for which app they work, how many hours a week they work, their birth year, and gender), as well as a scale to measure moral identity and the control variables (i.e., social support, workload and emotional). This questionnaire could be completed via a link or QR code that the respondents received. Starting on the 24th of May 2021, participants were instructed to fill in four daily dairy questionnaires, which gauged daily perceived unfairness, daily psychological contract breach, and daily work embitterment. Throughout these four days, participants completed a daily diary (N = 164) after their workday based on a daily reconstruction of that day. A diary study was used because it captures the variation in respondents' daily perceptions of unfairness (Ohly, Sonnentag, Niessen, & Zapf, 2010). Furthermore, diary studies allow for testing in the respondents' familiar environment, namely at home, and reduces retrospective bias through the use of diary studies, thus increasing the validity of the study (Ohly et al., 2010).

Ultimately, 51 respondents completed a minimum of two diary studies, which is sufficient to detect variation. After screening the predetermined criteria (i.e., working a minimum of 12 hours per week, being minimum 18 years old and completing minimum of two dairy studies), the final sample of this study consisted of 42 participants, of which 13 work for Deliveroo, 15 for Takeaway and 8 for Uber Eats, 5 respondents work at both Deliveroo and Uber Eats, and 1 respondent works at Takeaway and Uber Eats. Furthermore, the vast majority of the sample size consisted of men, specifically 35 respondents (83%), the remaining 7 respondents represented women (17%), with a mean age of 26 years (SD = 6.42). On average, participants completed two out of four days (Mean = 2.46, SD = 1.11) and 26 of them filled out the Dutch questionnaire (62%), whereas 16 filled out the English questionnaire (38%; SD = .48). Finally, participants already have 21 months (SD = 1.37) of work experience and work an average of 18 hours per week as a food rider (SD = 6.56).

3.2 Measures

The variables were measured via different measuring instruments, which are discussed below. For each variable, the respondents are asked to indicate the extent to which they agree with each statement on a seven-point Likert scale (1 = to a small extent and 7 = to a large extent). The scales used for this study are included in Appendix 1. Besides, for each scale, a Cronbach alpha is mentioned since this is a measure for the internal reliability of the scales. A Cronbach alpha greater than 0.60 means that the scale is reliable (Cleeren, 2020).

3.2.1 General questionnaire

Moral identity was measured based on the nine characteristics (i.e., caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and child) that define a moral person drawn up by Aquino & Reed (2002). An example item is "It would give me a great feeling to be someone who has these characteristics". Cronbach's alpha for this scale is .79.

3.2.2 Diary study

To measure organizational justice, two different scales were utilized. On the one hand, *distributive justice* with sample item "Today my assigned rides/work hours/... were fair" ($\alpha = .62 - .81$; $M = .71$) and *procedural justice* with sample item "the app allocated the rides/work hours/... for every rider in the same way" ($\alpha = .57 - .68$; $M = .62$) were measured using an abbreviated scale based on Niehoff and Moorman's (1993) scale (Michailidis & Cropley, 2017; Omar, Salessi, Vaamonde, & Urteaga, 2018). On the other hand, *interactional justice* was assessed through Colquitt's (2001) scale (e.g., Today the app treated me with respect) ($\alpha = .73 - .87$; $M = .78$).

To assess *work embitterment*, the core criteria of the Post-Traumatic Embitterment Disorder Self-Rating Scale was used (Linden, Baumann, Lieberei, & Rotter, 2009; Linden et al., 2008; Michailidis & Cropley, 2018). Previous studies have been using the Self-Rating Scale to explore work embitterment (e.g., Michailidis & Cropley, 2016, Michailidis & Cropley, 2018; Sensky, Salimu, Ballard, & Pereira, 2015). The participants were asked to focus on their experience at the workplace (Linden, Baumann, Lieberei, & Rotter, 2009). A sample item of this scale is "Today, there was a severe and negative event at work that I perceive as unjust and unfair" ($\alpha = .91 - .94$, $M = .92$.)

To measure *relational* and *transactional* psychological contract, the six-item scale designed by Rousseau (2000) was used. Some scientific papers (e.g., Adams, Adams Quagraine, & Klobodu, 2014; Aggarwal & Bhargava, 2010 and Freese & Schalk, 2008) made use of these items as well. An example of the relational subscale is: "Today, I protected this app-provider's image" ($\alpha = .58 - .77$; $M = .71$) and a sample item of the transactional is "Today, I only performed the necessary tasks" ($\alpha = .75 - .90$; $M = .80$).

3.2.3 Control variables

In this study, the variables age, gender, job demands (i.e., workload and emotional demand), and social support were included as control variables because they may influence the work embitterment of the individual (Kühn, Düzel, Drewelies, Gerstorf, Lindenberger, & Gallinat, 2018). In the past, this has already been researched, for instance, the research by Krettenauer, Muru, and Jia (2016) proved that as individuals grow older, they attach more importance to the values they consider essential for defining a very moral person. Next to that, Michailidis and Cropley (2018) indicate that social support is correlated with embitterment because it reduces stressors on employees and could impact the perceptions of organizational justice as well. Job demands are included as control variable because according to the Demand-Control Model by Karasek

(1979) high job demands in combination with low control can intensify the effects of organizational injustice on work behavior and health outcomes (Michailidis & Cropley, 2018).

Both *workload*, *emotional demand* and *social support* were assessed using the short version of the Copenhagen Psychosocial Questionnaire II (Kristensen & Borg, 2003). A sample item of *workload* is, "In my work I am often confronted with other people's personal problems" ($\alpha = .67$) while "In my job I am put in emotionally disturbing situations" ($\alpha = .78$) a sample item is for *emotional demand*. The abbreviated scale for social support consists of two items, exemplified by "In my job I can ask for help (e.g., via the app, colleagues, manager...)", with a Cronbach's alpha of .91.

3.3 Statistical analysis

The results of this research were analyzed by using the statistical program Stata/IC (64-bit). First, the Pearson product-moment correlation was checked. The Pearson product-moment correlation coefficient indicates the strength and direction of the relationship between two variables (Laerd Statistics, 2018). If the absolute value of the variable is greater than .5 there is a strong correlation, if the absolute value is between .3 and .5, there is a moderate correlation, and if the absolute value is smaller between .1 and .3, there is a small correlation. The sign accompanying the correlation coefficient denotes the type of relationship, specifically a minus sign indicates a negative relationship between the two variables, and a plus sign indicates a positive relationship (Laerd Statistics, 2018).

Before running models, a few assumptions were checked. Firstly, the minimum and maximum values of the scales were supposed to range from 1 to 7 since they were assessed using a seven-point Likert scale. In our case, no erroneous values were found in the data. An initial model was in turn estimated and the various assumptions were checked against this model. The normality of the residuals was verified using visual tests (i.e., histogram and pp-plot) and a statistical test, namely the Shapiro-Wilk W test for normal data. This demonstrated that the residuals were not normally distributed at a p-value of .05. Following that, a scatterplot was performed to check if the residues were homoscedastic, in this graph no pattern could be seen, and it could be concluded that the residues were homoscedastic. Subsequently, via a stem-and-leaf plot for standardized residuals, we verified whether there were extreme observations in the residuals. All values fell between 3 and -3, thus allowing us to conclude that there was an absence of outliers. Afterward, multicollinearity was verified, all VIF values were under 10 meaning there was no multicollinearity. Finally, the specification of the model was tested and allowed us to conclude that the model was correctly specified.

Since the data was collected using four diary studies, the data features a hierarchical structure with days ($N = 164$) nested within individuals ($N = 42$). Therefore, multilevel (moderated mediation) models were used since single regression models do not take into account the dependency in observations resulting in potentially biased outcomes (e.g., standard errors will be underestimated) (McNeish, 2014). In specific, an initial model was run with only the control variables as independent variables and the mediator (i.e., daily psychological contract breach) or the outcome variable (i.e., daily work embitterment) as dependent variable (= Model 1a and Model 2a). Then, the same model was run, but the key variables were added (= Model 1b and Model 2b). Finally, the moderator was added to the previous model in order to check for moderation (= Model 1c and 2c). However, the degree of dependence had to be checked first to ensure that multilevel models were permitted to be run. Using an empty model (i.e., a model where no predictors are included in the model and only the dependent variable is included as the outcome variable), the intraclass correlation coefficient (i.e., ICC) could be calculated. The ICC determines whether it was justified to estimate multilevel models and not OLS models. Hox's (1998) rule of

thumb, which says that when the ICC is greater than .05 a multilevel model can be estimated, was used in the decision-making (McNeish, 2014). In this study, the ICC was .54, which means that 54% of the total variance was explained at the between-person level and 46% at the within-person level. Subsequently, since the ICC was greater than .05 the various hypotheses were tested using the Baron and Kenny (1986) method for multilevel moderated mediation models.

In order to estimate the mediation effect of psychological contract breach, we used the method of Baron and Kenny (1986). This method comprises three sequential steps: (1) regression of mediator M on independent variable X (see Table 2), (2) regression of dependent variable Y on independent variable X, and (3) regression of Y on both X and M (see Table 3). Baron and Kenny (1986) postulated four eligibility criteria for determining whether or not mediation occurred. In addition, Baron & Kenny (1986) suggest performing a Sobel test (Sobel, 1982) to check the significance of the mediation, which was applied in the present design.

For the purposes of this study, within-person (i.e., level 1) and between-person (i.e., level 2) variables were distinguished from each other. Distinguishing within-person and between-person variation is essential to draw correct conclusions and accurately quantifying processes (Hoffman & Robert, 2009). Therefore, the level 1 variables (i.e., psychological contract breach and organizational justice) were person-mean centered, since we wanted to look at the within-person differences and since these are time-varying variables (Enders & Tofighi, 2007; Wang & Maxwell, 2015). Moreover, only person-mean centering enables the within-person effects to be correctly interpreted, since grand-mean centering does not remove all between-person variance (Ohly et al., 2010). The level 2 variables (i.e., age, social support, workload, and emotional demand), however, were grand-mean centered since they were measured at the between-person level. A great advantage of grand-mean centering is that it reduces multicollinearity (Kreft, de Leeuw, & Aiken, 1995). Lastly, to check whether the model fit improves, the Likelihood-ratio test (i.e., LRT) based on the $-2 \cdot \log(\text{likelihood})$ values is used after each estimated model. The LRT tests whether the model improves by adding more parameters and thus more complexity to the model. If one can reject the H_0 hypotheses (i.e., you should use the initial model), you should choose to use the more complex model, because the complex model is significantly more accurate than the initial model (Anderson, 2019).

4 Results

This section elaborates on the various results that come from the analyses. First, the descriptive statistics and the Pearson correlations are presented, followed by the results from the multilevel moderated mediation Models.

4.1 Descriptive statistics and Pearson correlation

The descriptive statistics of the dependent, independent, and control variables are presented in Table 1. For each variable, both the mean and standard deviation are reported first, followed by the correlation coefficient between the different variables. These correlations are identified and discussed further later.

As shown in Table 1, there was a small negative correlation between daily psychological contract breach and daily work embitterment, $r(151) = -.23, p < .01$, with daily psychological contract breach. This might seem surprising; however, further analysis is needed to draw conclusions. A second conclusion that could be drawn concerning the daily variables was that daily organizational justice was moderately negatively correlated to daily psychological contract breach, $r(151) = -.31, p < .01$, meaning that the estimated sign in our hypotheses is confirmed.

The major findings to be derived from Table 1 regarding the control variables will be briefly outlined next. First, both workload ($r(151) = .25, p < .01$) and emotional demand ($r(151) = .36, p < .001$) were positively correlated to daily work embitterment. Furthermore, there was a negative correlation between social support and psychological contract breach, $r(151) = -.32, p < .001$. Lastly, there was a small positive correlation between social support and organizational justice. In terms of demographic characteristics, this was in line with what was expected.

Table 1 Pearson correlation - Model 1

Variable	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Daily work embitterment	2.74	1.47												
(2) Daily psychological contract breach	4.33	1.05	-0.23**											
(3) Daily organizational justice	4.54	0.95	-0.15	-0.31***										
(4) Moral identity	5.03	0.83	0.05	-0.03	0.02									
(5) Workload	3.36	1.10	0.25**	-0.22**	-0.02	0.22**								
(6) Emotional demands	3.00	1.40	0.36***	-0.22**	-0.05	0.02	0.54***							
(7) Social support	5.10	1.59	0.15	-0.32***	0.29***	-0.01	0.08	0.11						
(8) Age	25.80	6.42	0.04	-0.17*	-0.00	0.31***	0.00	-0.06	-0.05					
(9) Gender	0.17	0.37	-0.02	0.06	0.06	-0.02	-0.02	-0.04	0.12	-0.00				
(10) Deliveroo	0.43	0.50	-0.34***	0.20**	-0.08	0.14	-0.31***	-0.28***	-0.31***	-0.00	0.14			
(11) Takeaway	0.37	0.49	0.18*	-0.16*	0.05	-0.03	0.15	0.26***	0.52***	-0.23**	-0.21**	-0.68***		
(12) Uber Eats	0.34	0.47	0.21**	-0.14	-0.21**	-0.03	0.37***	0.00	-0.29***	0.32***	-0.07	-0.10	-0.45***	
(13) Average working hours	18.30	6.56	0.07	-0.05	-0.09	-0.07	0.11	-0.10	0.15	0.23**	-0.18*	-0.01	0.05	0.07

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p<.05; ** p<.01; *** p<.001

4.2 Hypothesis testing

In this section, the final model is elaborated upon and the hypotheses are tested. Furthermore, some additional analyses are discussed.

4.2.1 Mediation-moderation model

Hypothesis 1 examined the direct relationship between daily perceived unfairness and daily work embitterment. In table 4, Model 2c we could conclude that this hypothesis could be accepted since there was a negative relationship between daily perceived fairness and work embitterment ($B = -.40, p < .01$). This meant that on days where there was a lack of fairness in the workplace, food app riders would tend to feel embittered that day. Furthermore, it is interesting to note that food app workers who work for Uber Eats are significantly more embittered ($B = 1.03, p < .05$), meaning that they perceive more daily unfairness compared to other food app workers.

Hypothesis 2 posited that daily psychological contract breach mediated the relationship between daily perceived unfairness and daily work embitterment. This relationship was not reflected in the results. On the one hand, the relationship between daily perceived unfairness and daily perceived psychological contract breach reached significance ($B = -.35, p < .01$). The relationship between daily psychological contract breach and daily work embitterment, however, was not significant ($B = -.11, p = .74$), leading us to state that daily psychological contract breach does not play a mediating role. Through the Sobel test (Sobel, 1982), it was checked to be sure that these conclusions were correct, but again it was confirmed that the mediator was not significant ($B = 1.52, p = .13$). Furthermore, looking at the LRT for Model 1b (compared to Model 1a), it can be concluded that the model is more accurate when adding the independent variable (i.e., daily organizational justice), so we should opt for the more complex model. Looking at model 2b (compared to Model 2a), however, adding the mediator does not make the model more accurate, which means that daily psychological contract breach does not mediate the relationship between daily organizational justice and daily work embitterment.

Finally, **hypothesis 3** explored the moderating role of moral identity. In model 1c, it can be concluded that moral identity does not moderate the relationship between daily perceived unfairness and daily psychological contract breach, since the interaction term appeared to be insignificant ($B = -.08, p = .84$). Furthermore, it should be noted that the LRT test does not reach significance when adding the moderator, meaning that we should opt for the nested model (i.e., model without moderator).

Table 2 Multilevel estimates for the predictions of daily psychological contract breach

	Daily psychological contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.58	.52	8.98**	4.58	.51	8.97**	4.58	.51	8.97**
Workload	-.03	.15	-0.18	-.03	.15	-0.17	-.03	.15	-0.17
Emotional demands	-.11	.11	-1.05	-.11	.11	-1.05	-.11	.10	-1.05
Social support	-.22	.09	-2.44*	-.22	.09	-2.43*	-.22	.09	-2.43*
Age	-.03	.02	-1.39	-.03	.02	-1.39	-.03	.02	-1.39
Gender	.18	.35	0.5	.18	.35	0.51	.18	.35	0.51
Deliveroo	-.13	.43	-0.31	-.13	.43	-0.31	-.13	.43	-0.31
Takeaway	-.24	.55	-0.44	-.24	.55	-0.44	-.24	.55	-0.44
Uber Eats	-.47	.42	-1.10	-.47	.42	-1.10	-.47	.42	-1.10
Average working hours	.01	.02	0.52	.01	.02	0.52	.01	.02	0.52
Daily organizational justice				-.33	.08	-4.07**	-.35	.08	-4.16**
Daily organizational justice x moral identity							-.08	.10	-0.84
-2*loglikelihood	186.04			178.30			177.95		
Δ-2*Loglikelihood				7.74**			0.35		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 3 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99**	2.46	.62	3.99**	2.46	.62	3.99**
Workload	-.23	.19	-1.23	-.23	.19	-1.22	-.23	.19	-1.21
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.09**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.61
Age	-.01	.02	-0.44	-.01	.02	-0.43	-.01	.02	-0.43
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.98	-.51	.52	-0.98
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.50
Uber Eats	1.03	.51	2.01	1.03	.51	2.01	1.03	.51	2.01*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.02
Daily psychological contract breach				-.11	.15	-0.74	-.26	.16	-1.66
Daily organizational justice							-.40	.15	-2.69**
-2*loglikelihood	254.72			254.45			250.94		
Δ-2*Loglikelihood				.27			3.51**		

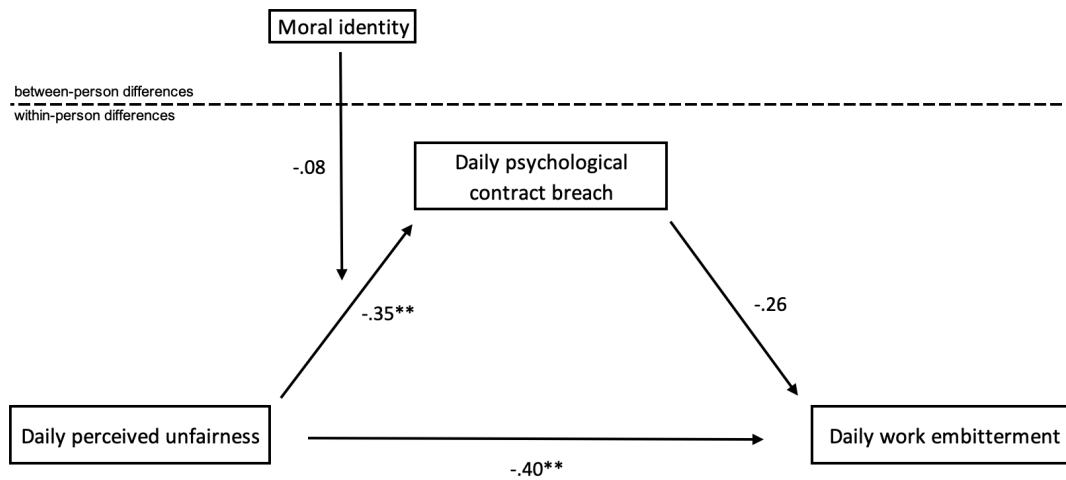
Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

The figure below shows the coefficients with their significances.

Figure 2 Conceptual framework with coefficients



4.2.2 Additional analyses

It is important to note that before arriving at the final model, several alternative models were explored. First, it was examined whether the three separate forms of justice (i.e., distributive, procedural, and interactional) were significant in the model, unfortunately, only procedural justice was significant ($B = -.25, p < .05$). Both distributive justice ($B = -.13, p > .01$) and interactional justice ($B = -.17, p > .01$) appeared to be insignificant. The output of these models can be found in Appendix 2.

Next to separating the different forms of justice, the same procedure was applied to daily psychological contract breach. In an additional analysis, we looked at the mediating role of relational contract breach and transactional breach in the relationship between daily perceived unfairness and daily work embitterment. The results of these models appeared to not be significant, meaning that there was no mediation for both relational contract breach and transactional contract breach. The output of these models can be found in Appendix 2 as well.

Furthermore, it should be noted that results did not reach significance when we did not eliminate the participants who did not meet the proposed requirements. Therefore, the final model includes participants who worked a minimum of 12 hours per week, who are a minimum of 18 years old, and who filled out at least two diary studies. In Appendix 2, the output of this model can be obtained.

Finally, it is important to remark that even when the sequence of the independent variables was altered or when insignificant control variables were omitted, the same conclusions could be drawn. The direct relationship between daily perceived unfairness and daily work embitterment was in each case significant. Hypotheses 2 and 3, however, could not be accepted and remained insignificant.

5 Discussion

Using a four-day diary study, this master thesis aimed to explore the within-person effects of daily perceived unfairness on daily work embitterment among food app workers and the mediating role of daily psychological breach in this relationship. In addition to this, the buffering role of moral identity was examined. The next part covers the theoretical contributions, limitations and suggestions for future research, and practical implications. The most important conclusion that can be drawn, is that daily perceived unfairness leads to daily work embitterment. Therefore, app providers should recognize the issues of fairness and the extent to which the algorithm makes fair decisions.

5.1 Theoretical contributions

This study first of all makes some contributions to the literature. Consistent with Linden's (2013), who already stated that an unfair event is a predictor of work embitterment, this master's thesis supports these findings. Previous studies tended to see this correlation as something stable, but this study found that it can fluctuate from day to day. In particular, we found that on days were food app-workers perceived unfairness, they were more embittered. This, in turn, shows that food app workers may not experience the same amount of unfairness on a daily basis, resulting in fluctuating feelings of embitterment. These findings expand previous research showing that food app workers, who perceive more unfairness on a particular day, will feel more embittered that day.

According to the Demand-Control Model by Karasek (1979), high job demands in combination with low control can intensify the effects of organizational injustice on work behavior and health outcomes (Michailidis & Cropley, 2018). Our findings support the assumptions of this model in that a positive relationship was found between emotional demands and daily work embitterment, meaning that a high level of emotional demands results in a significant increase in work embitterment.

Contrary to the research of Proost, Pavlinská, Baillien, Brebels, and Van den Broeck (2013), which demonstrated that individuals with a high moral identity are more sensitive to unfair treatment and are more likely to counter unfairness, this master's thesis found no support that this held true. One possible explanation for this might be that regardless of the moral identity of food app workers, they all experience psychological contract breach the same way. This means that moral identity does not buffer or amplify the relationship between daily perceived unfairness and daily psychological contract breach. Furthermore, other factors might have an influence, such as interpersonal sensitivity (i.e., a personality trait that refers to an undue and excessive awareness of, and sensitivity to, the behavior and feelings of others). Employees with different interpersonal sensitivity have different perceptions of a breach (Liu, Chen, & Liu, 2020). Applied to this current research it might be that food app workers are more insensitive to daily psychological contract breach. Further research could explore the role of interpersonal sensitivity.

The results of this master's thesis support the idea of the Social Exchange Theory (Homans, 1958) in that unfairness leads to psychological contract breach. Food app workers who experience unfair treatment due to the organization's unwillingness to reciprocate in exchange obligations leads to psychological contract breach. However, no evidence was found that daily psychological contract breach leads to daily work embitterment, therefore we cannot support the

findings of, for instance, Bal et al., 2007; Nimmo, 2018 nor Sensky, 2010, who found evidence that psychological contract breach harms employees' trust in their organization and make them feel frustrated. One potential explanation could be that daily psychological contract breach does not cause daily work embitterment directly, but that other factors, such as stress should be considered. Previous research already revealed that psychological contract breach causes stress (Duran, Bishopp, & Woodhams, 2019). Therefore, further research could investigate whether stress might have an influence on this relationship.

Although the relationship between daily psychological contract breach and daily work embitterment did not reach significance, there appeared to be a negative correlation between daily psychological contract breach and daily work embitterment. This might seem surprising, however, there might be a logical explanation for this, in that food app workers will adjust their behavior in certain situations in order to feel less embittered. For example, in situations where food app workers perceive that the app provider is not fulfilling the mutual promises and thus breaking the psychological contract, food app workers will start performing only the necessary tasks for which they receive compensation and will not make personal sacrifices for the app provider, which will make them feel less embittered. In other words, food app workers adapt their behavior to the situation in order to protect themselves from feeling embittered.

5.2 Limitations and suggestions for further research

While reading this master's thesis, the reader must bear some limitations in mind. A first limitation concerns the sample size of this present study. First of all, the sample is relatively small, according to previous research in high-ranking journals, we should have sampled at least 100 respondents (Ohly et al., 2010). This sample size consists out of 42 respondents, so this may be a reason why the expected relationships were not found. It should be noted, however, that scientific papers do not meet this condition and have a similar sample size (i.e., Bakker & Oerlemans, 2019; Cojuharenco & Patient, 2013). Finally, looking at the measurement invariance, no differences were found between the factor loadings for daily work embitterment and daily psychological contract breach, meaning that both English and Dutch respondents understood the questions in the same way. However, for justice, differences were found in factor loadings. Although this is not necessarily due to a lack of understanding, cultural differences may play a role here. Food app workers who value the group more will perceive procedures that treat everyone equally - regardless of performance - as fair. In contrast, workers who value getting what they deserve may see procedures that stress equity as fair (Cropanzana, 2001). Belgium, for instance, scores high on individualism (i.e., the degree to which individuals look out for themselves first and the organization and society next), meaning that Belgian citizens care more about getting what they deserve than about treating everyone equally. On the contrary, Romania scores low on individualism, meaning that Romanian citizens value fair treatment for everyone more (Hofstede, 2021). It should be noted, however, that this master's thesis did not take the origin of food app workers into account. Therefore, further research can take these differences into account. Lastly, while handing out the flyers, only food app workers who mastered the Dutch and English language were approached, leading to selection bias.

Next, it is possible that the emotions regarding psychological contract breach and work embitterment had already subsided by the end of the working day. According to Ohly, Sonnentag, Niessen, and Zapf (2010), in case of event sampling (i.e., i.e., it requires respondents to report a distressing event), the questionnaire regarding the event should be completed immediately afterward. In this study, participants were asked to complete the diaries after their workday, which means they already had time to think about the event and could already put it into perspective.

Further research may conduct a similar study, but mention that the respondent must complete the questionnaire immediately after the event.

A final limitation concerns the ongoing COVID-19 crisis, which affects a lot of people and companies. During this crisis, physical classes on campus have been substituted for online classes, allowing students to better schedule their day and choose when to watch the class. Since they can better schedule their day, most of the students look for a student job to earn some extra money. Seven of the respondents (=17%), who work more than 12 hours a week, indicated that they work as a student. Students consider doing this job purely as lucrative supplemental income and do not need to do this to make ends meet, which means they are not forced to be online all the time, do long distant orders, or work when the weather is bad. Furthermore, from verbal conversations, while handing out flyers, it appeared that many people have lost their jobs due to the COVID-19 crisis and are seeking refuge in food app-work to make ends meet. Looking at the data, 19 respondents (=40%) have been working as food app workers for less than 12 months. Of course, it is not clear if this is directly due to the crisis, but it could be, since the crisis started in March 2020. Further research could re-examine the current study once the Covid-19 crisis is fully resolved and everything is back to normal.

5.3 Practical implications

Next to the theoretical implications, this study highlights some important practical implication for organizations to consider. The notion that perceived unfairness is implicit in the experience of work embitterment hints that app providers should pay attention to issues of fairness and the extent to which the algorithm makes fair decisions. App providers should promote open communication with food app workers to ensure they can voice their opinions about a decision they perceived to be unfair and about issues they may face at work. Next to promoting open communication, app providers should be able to identify hallmarks of work embitterment through training and act before the problem is entrenched. In this way, they will know how to deal with daily work embitterment. Moreover, food app workers should also dare to speak up when they feel treated unfairly. This will prevent them from feeling embittered. Currently, they do not always have the opportunity to do so, which is why app providers must guarantee open communication and ensure that food app workers can voice their opinions. In brief, it is in everyone's best interest to address unfairness to prevent work embitterment.

6 Reference list

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Appendix 1

Measuring instruments

Organizational justice (Colquitt, 2001; Niehoff & Moorman, 1993)

Distributive Justice

Please indicate on a seven-point Likert scale to what extent the following statements concerning the level of compensation are applicable (1 = to a small extent and 7 = to a large extent)?

Today...

1. ...my assigned rides/work hours/... were fair.
2. ...I thought that my level of pay was fair.
3. ...I found my workload (e.g., the number of rides you received, the distance of the rides...) quite fair.

Procedural Justice

Please indicate on a seven-point Likert scale to what extent the following statements concerning the procedures used to divide the orders are applicable (1 = to a small extent and 7 = to a large extent)?

Today...

1. ...the app collected accurate and complete information to make decisions (e.g., about the allocation of rides/work hours/...).
2. ...I had the ability to challenge or appeal the decisions made by the app (e.g., about the allocation of the rides/work hours/...).
3. ...the app allocated the rides/work hours/... for every rider in the same way.

Interactional Justice

Please indicate on a seven-point Likert scale to what extent the following statements concerning the supervisor are applicable (1 = to a small extent and 7 = to a large extent)?

Today...

1. ...the app treated me with respect
2. ...the app treated me with dignity
3. ...the app did not treat me with respect

Work embitterment (Linden, Baumann, Lieberei & Rotter, 2009)

Please read the following statements and indicate to what degree they apply to you (1 = to a small extent and 7 = to a large extent).

Today, there was a severe and negative event at work...

1. ...that led to a noticeable change in my mental well-being.
2. ...that I perceive as unjust and unfair.
3. ...that made me feel extremely upset, bitter and helpless.
4. ...that made me feel anxious or even a little depressed.

Psychological contract breach

Please read the following statements and indicate to what degree they apply to you (1 = to a small extent and 7 = to a large extent).

Transactional psychological contract (Rousseau, 2000)

Today...

1. ...I only performed the necessary tasks.
2. ...I only performed specific duties for which I receive a compensation.
3. ...I only did what I am paid to do.

Relational psychological contract (Rousseau, 2000)

Today...

1. ...I was willing to make personal sacrifices for this app-provider
2. ...I protected this app-provider's image
3. ...I made a personal commitment to this app-provider

Moral identity (Aquino & Reed, 2002)

Imagine being a person with the following traits: caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind). Imagine how that person would think, feel, and act and answer the following questions. Please indicate the extent to which you agree with the following statements on a 7-point scale (1= strongly disagree and 7 = strongly agree).

1. It would give me a great feeling to be someone who has these characteristics.
2. To be someone who has these characteristics is an important part of who I am.
3. I would feel embarrassed being a person who has these characteristics.
4. To have these characteristics is not really important to me.
5. I strongly wish to possess these characteristics.
6. I often wear clothes that identify me as having these characteristics.
7. The type of activities I do in my leisure time (e.g., hobbies) reflects that I have these characteristics.
8. These characteristics are reflected in the kind of books and magazines I read.
9. Being a member of certain organizations shows that I have these characteristics.
10. I participate in activities that make others notice that I have these characteristics.

Control variables

Workload (Kristensen & Borg, 2003)

Please indicate the extent to which you agree with the following statements on a 7-point scale (1= strongly disagree and 7 = strongly agree).

In my job...

1. ...I have to work very fast.
2. ...my workload is unevenly distributed so it piles up.
3. ...I regularly do not have enough time to complete all my work tasks.

Emotional demands

Please indicate the extent to which you agree with the following statements on a 7-point scale (1= strongly disagree and 7 = strongly agree).

In my job...

1. ...I am put in emotionally disturbing situations.
2. ...I am often confronted with other people's personal problems.

Social support in the workplace (Undén et al., 1991)

Please indicate the extent to which you agree with the following statements on a 7-point scale (1= strongly disagree and 7 = strongly agree).

In my job...

1. ...I can ask for help (e.g., via the app, colleagues, manager...).
2. ...there are people who can help me.

Appendix 2

Table 4 Multilevel estimates for the predictions of daily psychological contract breach

	Daily psychological contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.58	.51	8.98***	4.58	.51	988.***	4.59	.51	8.97***
Workload	-.03	.15	-0.18	-.03	.15	-0.18	-.05	.17	-.30
Emotional demands	-.11	.11	-1.05	-.11	.11	-1.05	-.10	.11	-.94
Social support	-.22	.09	-2.44*	-.22	.09	-2.44*	-.22	.09	-2.44*
Age	-.03	.02	-1.39	-.03	.02	-1.39	-.03	.02	-1.38
Gender	.18	.35	0.5	.18	.35	0.51	.18	.35	0.54
Deliveroo	-.13	.43	-0.31	-.13	.43	-0.31	-.17	.44	-0.38
Takeaway	-.24	.55	-0.44	-.24	.55	-0.44	-.26	.55	-0.47
Uber Eats	-.47	.42	-1.10	-.47	.42	-1.10	-.44	.43	-1.02
Workedhours	.01	.02	0.52	.01	.02	0.52	.01	.02	0.60
Daily distributive justice				-.19	.07	-2.62**	-.19	.08	-2.63**
Daily distributive justice x moral identity							-.05	.08	-0.56
-2*loglikelihood	186.04			182.72			182.51		
Δ-2*Loglikelihood				3.32**			0.21		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 5 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99***	2.46	.62	3.99***	2.46	.62	3.99***
Workload	-.23	.19	-1.23	-.23	.19	-1.22	-.23	.19	-1.22
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.09**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.62
Age	-.01	.02	-0.44	-.01	.02	-0.43	-.01	.02	-0.43
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.98	-.51	.52	-0.98
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.49
Uber Eats	1.03	.51	2.01*	1.03	.51	2.01*	1.03	.51	2.01*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.02
Daily psychological contract breach				-.11	.15	-0.74	-.16	.15	-1.04
Daily distributive justice							-.16	.12	-1.34
-2*loglikelihood	254.72			254.45			253.56		
Δ-2*Loglikelihood				.27			.89		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 6 Multilevel estimates for the predictions of daily psychological contract breach

	Daily psychological contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.58	.51	8.98***	4.58	.51	8.97***	4.59	.51	8.99***
Workload	-.03	.15	-0.18	-.03	.15	-0.18	-.05	.17	-0.30
Emotional demands	-.11	.11	-1.05	-.11	.11	-1.05	-.10	.11	-.95
Social support	-.22	.09	-2.44*	-.22	.09	-2.43*	-.22	.09	-2.44*
Age	-.03	.02	-1.39	-.03	.02	-1.39	-.03	.02	-1.38
Gender	.18	.35	0.5	.18	.35	0.51	.18	.35	0.54
Deliveroo	-.13	.43	-0.31	-.13	.43	-0.31	-.16	.44	-0.38
Takeaway	-.24	.55	-0.44	-.24	.55	-0.44	-.26	.55	-0.47
Uber Eats	-.47	.42	-1.10	-.47	.42	-1.10	-.44	.43	-1.02
Workedhours	.01	.02	0.52	.01	.02	0.52	.01	.02	0.60
Daily procedural justice				-.20	.06	-3.24**	-.20	.06	-3.33**
Daily procedural justice x moral identity							-.07	.08	-0.87
-2*loglikelihood	186.04			181.00			180.57		
Δ-2*Loglikelihood				5.04**			0.43		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 7 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99***	2.46	.62	3.99***	2.46	.62	3.99***
Workload	-.23	.19	-1.23	-.23	.19	-1.22	-.23	.19	-1.21
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.08**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.61
Age	-.01	.02	-0.44	-.01	.02	-0.43	-.01	.02	-0.43
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.98	-.51	.52	-0.98
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.49
Uber Eats	1.03	.51	2.01*	1.03	.51	2.01*	1.03	.51	2.00*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.03
Daily psychological contract breach				-.11	.15	-0.74	-.24	.15	-1.55
Daily procedural justice							-.30	.10	-2.85**
-2*loglikelihood	254.72			254.45			250.53		
Δ-2*Loglikelihood				.27			3.92**		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 8 Multilevel estimates for the predictions of daily psychological contract breach

	Daily psychological contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.58	.52	8.98***	4.58	.51	8.97***	4.59	.51	8.99***
Workload	-.03	.15	-0.18	-.03	.15	-0.17	-.05	.16	-0.30
Emotional demands	-.11	.11	-1.05	-.11	.11	-1.05	-.10	.11	-.95
Social support	-.22	.09	-2.44*	-.22	.09	-2.43*	-.22	.09	-2.44*
Age	-.03	.02	-1.39	-.03	.02	-1.39	-.03	.02	-1.38
Gender	.18	.35	0.5	.18	.35	0.51	.18	.35	0.54
Deliveroo	-.13	.43	-0.31	-.13	.43	-0.31	-.17	.44	-0.38
Takeaway	-.24	.55	-0.44	-.24	.55	-0.44	-.26	.55	-0.47
Uber Eats	-.47	.42	-1.10	-.47	.42	-1.10	-.44	.43	-1.02
Workedhours	.01	.02	0.52	.01	.02	0.52	.01	.02	0.60
Daily interactional justice				-.23	.06	-3.43***	-.23	.07	-3.50***
Daily interactional justice x moral identity							-.07	.08	-0.82
-2*loglikelihood	186.04			180.44			180.05		
Δ-2*Loglikelihood				5.6**			0.39		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 9 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99***	2.46	.62	3.99***	2.46	.61	3.99***
Workload	-.23	.19	-1.23	-.23	.19	-1.22	-.23	.19	-1.21
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.09**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.62
Age	-.01	.02	-0.44	-.01	.02	-0.43	-.01	.02	-0.43
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.98	-.51	.52	-0.98
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.50
Uber Eats	1.03	.51	2.01*	1.03	.51	2.01*	1.03	.51	2.01*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.02
Daily psychological contract breach				-.11	.15	-0.74	-.20	.16	-1.26
Daily interactional justice							-.22	.12	-1.81**
-2*loglikelihood	254.72			254.45			252.84		
Δ-2*Loglikelihood				.27			1.61		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 10 Multilevel estimates for the predictions of daily relational contract breach

	Daily relational contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.98	.66	7.49***	4.98	.66	7.48***	4.96	.67	7.45***
Workload	-.11	.20	.53	-.11	.20	.53	-.15	.22	.68
Emotional demands	-.19	.14	-1.36	-.19	.14	-1.36	-.21	.14	-1.43
Social support	-.07	.12	-.62	-.07	.12	-.62	-.07	.12	-.61
Age	-.05	.03	-2.07*	-.05	.03	-2.07*	-.05	.03	-1.59
Gender	.14	.45	0.30	.14	.45	0.30	.12	.46	0.26
Deliveroo	.30	.56	-0.53	.30	.56	-0.53	.36	.57	-0.63
Takeaway	-.13	.72	-.18	-.13	.72	-.18	-.10	.72	-.14
Uber Eats	-.39	.55	-.71	-.39	.55	-.71	-.44	.56	-.78
Workedhours	.03	.03	1.38	.03	.03	1.38	.03	.03	1.20
Daily organizational justice				-.15	.11	-1.34	-.19	.11	-1.62
Daily organizational justice x moral identity							-.19	.13	-1.39
-2*loglikelihood	232.58			231.69			230.63		
Δ-2*Loglikelihood				.89			1.06		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 11 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99***	2.46	.62	3.99***	2.46	.62	3.99***
Workload	-.23	.19	-1.23	-.23	.19	-1.23	-.23	.19	-1.22
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.08**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.62
Age	-.01	.02	-0.44	-.01	.02	-0.44	-.01	.02	-0.44
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.99	-.51	.52	-0.99
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.50
Uber Eats	1.03	.51	2.01*	1.03	.51	2.02*	1.03	.51	2.01*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.02
Daily relational contract breach				-.01	.11	.13	-.13	.12	1.11
Daily organizational justice							-.38	.15	-2.49*
-2*loglikelihood	254.72			254.71			251.69		
Δ-2*Loglikelihood				.01			3.02*		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 12 Multilevel estimates for the predictions of daily transactional contract breach

	Daily transactional contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.98	.66	7.49***	4.98	.66	7.48***	4.96	.66	7.45***
Workload	.10	.20	.53	.11	.20	.53	.15	.22	.68
Emotional demands	-.19	.14	-1.36	-.19	.14	-1.36	-.20	.14	-1.43
Social support	-.07	.12	-.62	-.07	.12	-.62	-.07	.12	-.61
Age	-.05	.03	-2.07	-.05	.03	-2.07	-.05	.03	-1.59
Gender	.14	.46	.30	.14	.46	.30	.12	.46	.26
Deliveroo	.30	.56	.53	.30	.56	.53	.36	.57	.63
Takeaway	-.13	.72	-.18	-.13	.72	-.18	-.10	.72	-.14
Uber Eats	-.39	.55	-.71	-.39	.55	-.71	-.43	.56	-.78
Workedhours	.04	.03	1.38	.04	.03	1.38	.03	.03	1.20
Daily organizational justice				-.15	.12	-1.34	-.19	.12	-1.62
Daily organizational justice x moral identity							-.19	.12	-1.62
-2*loglikelihood	232.58			231.69			230.63		
Δ-2*Loglikelihood				.89			1.06		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 13 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	2.46	.62	3.99***	2.46	.62	3.99***	2.46	.62	3.99***
Workload	-.23	.19	-1.23	-.23	.19	-1.23	-.23	.19	-1.22
Emotional demands	.40	.13	3.08**	.40	.13	3.08**	.40	.13	3.08**
Social support	.07	.11	0.62	.07	.11	0.62	.07	.11	0.62
Age	-.01	.02	-0.44	-.01	.02	-0.44	-.01	.02	-0.44
Gender	.26	.43	0.62	.26	.43	0.62	.26	.43	0.62
Deliveroo	-.51	.52	-0.99	-.51	.52	-0.99	-.51	.52	-0.99
Takeaway	.33	.66	0.50	.33	.66	0.50	.33	.66	0.50
Uber Eats	1.03	.51	2.01*	1.03	.51	2.02*	1.03	.51	2.01*
Average working hours	.02	.02	1.02	.02	.02	1.02	.02	.02	1.02
Daily transactional contract breach				-.12	.11	-1.01	-.15	.11	-1.32
Daily organizational justice							-.34	.14	-2.38*
-2*loglikelihood	254.72			254.21			251.43		
Δ-2*Loglikelihood				.51			2.78*		

Note: N = 164 days nested within persons (N = 42)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 14 Multilevel estimates for the predictions of daily psychological contract breach

	Daily psychological contract breach								
	Model 1a			Model 1b			Model 1c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	4.60	.42	10.98**	4.60	.42	11.00**	4.60	.42	11.01**
Workload	.03	.11	.25	.03	.11	.26	.04	.11	.36
Emotional demands	-.08	.08	-1.01	-.08	.08	-1.01	-.08	.08	-1.03
Social support	-.20	.07	-2.79*	-.20	.07	-2.79*	-.20	.07	-2.79*
Age	-.03	.02	-1.62	-.03	.02	-1.62	-.03	.02	-1.28
Gender	.15	.30	0.5	.15	.30	0.5	.14	.30	0.48
Deliveroo	-.06	.36	-.18	-.07	.36	-.19	-.05	.36	-.14
Takeaway	-.27	.46	-.58	-.27	.46	-.59	-.25	.45	-.56
Uber Eats	-.31	.36	-.87	-.31	.36	-.88	-.35	.37	-.96
Average working hours	.01	.01	.85	.01	.01	.86	.01	.01	.80
Daily organizational justice				-.28	.08	-3.43**	-.31	.08	-3.63***
Daily organizational justice x moral identity							-.11	.09	-1.18
-2*loglikelihood	244.66			239.00			238.17		
Δ-2*Loglikelihood				5.66**			0.83		

Note: N = 207 days nested within persons (N = 52)

Gender: 1 = female

* p< .05; ** p< .01; *** p< .001

Table 15 Multilevel estimates for the predictions of daily work embitterment

	Daily work embitterment								
	Model 2a			Model 2b			Model 2c		
	B	SE	t-value	B	SE	t-value	B	SE	t-value
Intercept	3.33	.57	5.87***	3.33	.57	5.87***	3.33	.57	5.87***
Workload	-.08	.15	-.51	-.08	.15	-.51	-.08	.15	-.51
Emotional demands	.31	.11	2.81*	.31	.11	2.81*	.31	.11	2.81*
Social support	.14	.10	1.30	.13	.10	1.30	.13	.10	1.31
Age	-.01	.02	-.48	-.01	.02	-.48	-.01	.02	-.48
Gender	-.04	.41	-.10	-.04	.41	-.10	-.04	.41	-.11
Deliveroo	-1.09	.48	-2.24*	-1.09	.48	-2.24*	-1.09	.48	-2.24*
Takeaway	-.71	.62	-1.16	-.72	.62	-1.16	-.72	.62	-1.17
Uber Eats	.44	.49	.91	.44	.49	.91	.44	.49	.90
Average working hours	.02	.02	.99	.02	.02	.99	.02	.02	.98
Daily psychological contract breach				-.24	.13	-1.81	-.31	.18	-2.16*
Daily organizational justice							-.32	.14	-2.35*
-2*loglikelihood	335.21			333.59			331.29		
Δ-2*Loglikelihood				1.62			3.51*		

Note: N = 207 days nested within persons (N = 52)

Gender: 1 = female

* p < .05; ** p < .01; *** p < .001

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Perception of unfairness prevails among food app workers

“I was very agitated during my shift.” This quote clearly states that a food app worker felt a negative emotion, which might have been the result of being mistreated or wronged. Within the domain of Human Research Management at KU Leuven, research was done into the relationship between daily perceived unfairness and daily work embitterment.

The results of this study show a positive relationship between daily perceived unfairness and daily work embitterment. In practical terms, this means that on days when food app-workers perceive unfairness at work, they are more likely to experience work embitterment. This notion hints that app providers should pay attention to issues of unfairness. Therefore, promoting open communication with food app workers will decrease perceived unfairness and thus prevent food app workers from feeling embittered.

The study

This master's thesis was pursued among 42 food app workers, who work a minimum of 12 hours per week. Before the diary study, respondents were asked to complete a general questionnaire assessing a person's moral identity. Subsequently, for four days, participants were sent an online questionnaire, assessing their perceived unfairness, psychological contract breach and work embitterment of that particular day.

KU Leuven is considered to be one of the most ancient universities in Europe and was founded in 1425. The university is known for its pioneering scientific research and high-quality education offering a wide range of bachelor and master programs. Today, KU Leuven counts more than 50,000 students divided among its 15 faculties, across ten Flemish cities.

Additional information is available at: <https://www.kuleuven.be/over-kuleuven>.

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