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Steen Bjerre[1]
Anka Tsvetanova[2]
Siya Veleva[3]

COMPANY STRESS MEASUREMENT MODEL[4]

As a result of stressor exposure, the human response includes physiological, psychological, and behavioural responses, like stress. And, in the literature and on the internet, there are numerous suggestions and methods for monitoring and addressing stress in workplaces.

Most of these models have been inspired by the Person-environment fit and demand-control models. The first evaluates stress by matching the personal characteristics and the workplace conditions, whereas the second by combining job demand and the controllability of the work task.

Also, the "effort-reward imbalance model", which observes a possible mismatch between the cost an employee spends at work and the gain and reward, which is received in return, is seen as a prominent model for stress measuring.

All models measure, either subjectively or objectively, the stress level of the individuals as responses to stressors. It is not always clear enough which stressors cause each specific stress response. In some studies, however, reasons like the workload and poor management are quoted as the reason for stress, but no models or known studies relate these stressors to specific work functions or specific business drivers.

Businesses have different reasons for measuring stress, one being preserving performance and competitiveness. However, none of the models makes a distinctive linkage and an explanation between perceived stress and business performance.

The way individual employees contribute to the various business drivers determines the business result. Knowing that persons respond differently to the same stressor, it would be beneficial to any business to clarify which stressors prevail in the single and decisive business drivers, and how these stressors impact the stress level on the individual employee's performance, and ultimately on the general business results. A method to address this challenge is presented in this paper.

Keywords: stress; workplace; measurement; business driver; stress measurement model

JEL: D23; M12; M14; M54

[1] *Steen Bjerre, +4915203224888, International School of Management, Germany, phone, steen.bjerre@gmail.com.*

[2] *Anka Tsvetanova, Associated Professor, Technical University of Sofia, +359882486651, a.cwetanova@tu-sofia.bg.*

[3] *Siya Veleva, Associated Professor, University of Architecture, Civil Engineering and Geodesy, +359885061010, s.veleva_fgs@uacg.bg.*

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1. Introduction

Work-related stress (WRS) occurs as a result of a discrepancy between an individual's skill sets, or available resources, and on the other side the challenges or the demands of the work environment, which the person is facing.

Stress may occur when the demand from the work environment exceeds the employee's ability to meet or control this demand. Or, as defined by the U.S. Department of Health and Human Services (Stress at Work, 1999, p. 6), "Job stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker".

According to the research company Gallup, the daily stress among global employees has increased steadily from 32% (in 2010) to 44% (in 2022) (Inc, 2023).

Gallup quotes further that 52% of North American and East Asian employees reported being stressed a lot during the day, which was the case for 39% of the Europeans. Another study concluded that even 66% of European workers experienced work-related stress (Start, 2021).

The European Union's Agency for Safety and Health at Work says: "Around half of European workers consider stress to be common in their workplace, and it contributes to around half of all lost working days" (EU-OSHA).

Thus, employees are experiencing high levels of stress, and the level is steadily increasing. This development does not only influence the individual employees, but it also impacts the performance of her/his company.

In a 2021 study (Bui et al., p. 42) with 186 participants where stress was measured by the Perceived Stress Scale (Cohen et al., 2014) and productivity was measured by the Health and Work Questionnaire (Shikiar et al., 2008), it was concluded that "...higher stress scores were associated significantly with lower productivity scores".

The more stressed a person is, the lower is the job motivation and consequently also the person's job performance. There is therefore a direct relationship between the employees' stress level and company performance. Consequently, a company's striven to stay competitive and profitable must include an understanding of not only the mental health, including the stress level within the organization, but even more importantly, the company must understand what causes the stress. Only by understanding the reasons and having a clear understanding of the type of stressors, which are coursing the stress, the company is able to actively focus on instigating activities to reduce the employees' stress.

From a corporate point of view is it therefore essential to ensure that the staff is healthy and motivated, but maybe even more importantly also to understand what may disturb this optimum.

2. Literature Review

2.1. Mapping physical and psychological working environment

The European Union has been aware of the importance of the health situation and motivation of the European workforce. In the two major EU strategies, the "Lisbon strategy", and especially in the "Europe 2020" the issue has somewhat weakly been touched upon. In relation to the European 2020 strategy the European Commission said, that "...one of the central commitments in the Lisbon Strategy to increase employment and productivity by enhancing competitiveness calls for an intensified effort by all players to improve Occupational Safety and Health performance in the EU" (Colosio et al., 2017).

Back in 1989, the EU had been even more specific by issuing Directive 89/391/EEC (phrased the "Framework Directive") aiming at legislative measures to establish health and safety procedures for workers at work. However, the text didn't mention "psychosocial risk" or "work-related stress" specifically (Leka et al., 2014), thus, stress was not a focal point.

In general, the outlined procedure from the a.m. the Directive, or the "workers' health surveillance" scheme (WHS), which by now is implemented in all EU countries and includes all employers, must include identification and mapping of the company's working environment – the physical as well as the psychological working environment, – including identification of causes and possible solutions.

When preparing the WHS, the companies may themselves decide which methods and how the various issues are being dealt with. That is, there is no common, consistent, or required methodology for measuring a psychosocial risk like stress.

So, all companies need to conduct a regular WHS including an assessment of the psychosocial environment, which includes the level (and the reasons) for organizational stress, not only because of legal requirements, but also, as mentioned above, because they need to keep track of the mental or the motivational status within the company. And since no standard method for measuring the company's stress level has been laid down, the individual companies must decide themselves for a workable method.

2.2. Why would a business measure stress?

In the European Union, there are legal requirements for regular workplace assessments. Back in 1998, the EU issued directive 89/391 stipulating legal requirements for such regular workplace assessments. Initially, the objective was to prevent risks and accident factors at workplaces. However, as the directive has been implemented, several EU countries have been more specific in their laws by including assessment of work-related stress and psychosocial risks (this goes for e.g., Sweden, Denmark, Germany, and the Czech Republic) (Leka et al., 2015, p. 4).

Therefore, because of legislation, at least in some of the EU countries, workers' safety and health are supposed to be evaluated every 3 years. However, it has been observed that companies have a somewhat relaxed attitude to workplace assessments: Only about 25% of all companies (in the EU) conduct regular workplace assessments (ESENER 2019, p. 16).

But even so, legislative requirements are one of the reasons for companies' measurement of stress.

Another reason for companies' measurement of stress might be the result of a "soft", or culturally based HR policy. By "soft" it means that a company measures stress out of a wish to secure the well-being of its employees. The reason has no financial or operational ulterior motives, but a wish to prevent, or to support employees from physical or mental disorders, that is, "keep employees sound and happy", which, of course, may also have a positive effect on work morale, and ultimately also on business performance! Measuring the organizational stress level enables the company, if required, to initiate proactive steps to improve motivation and a positive work environment.

Companies strive to maximize their profits and must therefore constantly be aware of their performance in terms of competitiveness and productivity, which are both factors that stressed employees can influence negatively.

From measuring the organizational stress, companies can identify the possible bottlenecks coursed by stressed employees and take actions to minimize their impact on the company's performance in terms of avoiding higher absenteeism, higher employee turn-over, lower motivation, and in the end, lower productivity.

Having monitored and understood the reasons for stress, the company can, ideally, initiate undertakings to remove these reasons and consequently ensure a better, more efficient and more motivated working environment, which forms the basis for a positive development of the company's performance.

To ensure optimal company performance, the companies' motives therefore include measuring stress to understand which employee is stressed, and, ideally, which business functions are leading to stress. Only then the company can adjust processes and try to minimize or remove the identified stressors.

Therefore, from a managerial point of view, the measuring and the clarification of the stress level does not and should not only fulfil legal requirements, but also be helpful to, and support the daily operation ensuring a sound and productive development of the company's performance.

Only by having identified the stressors leading to a stressful work environment, the company is able to take measures to minimize or remove these stressors, (for example, by altering work processes or initiating (cultural) change programs...). And, having identified a stressed employee, she/he might be moved to a different function or department, where the said stressor doesn't prevail, or at least to a lower degree.

In both cases, the company is proactively initiating measures to reduce the organisational stress level to improve company performance.

By understanding the stressors which are influencing the employees' well-being/stress-level negatively, it is possible for the employer to intervene and initiate activities to remove these stressors, or to make organizational adjustments leading to fewer absences, higher organizational motivation and ultimately higher productivity.

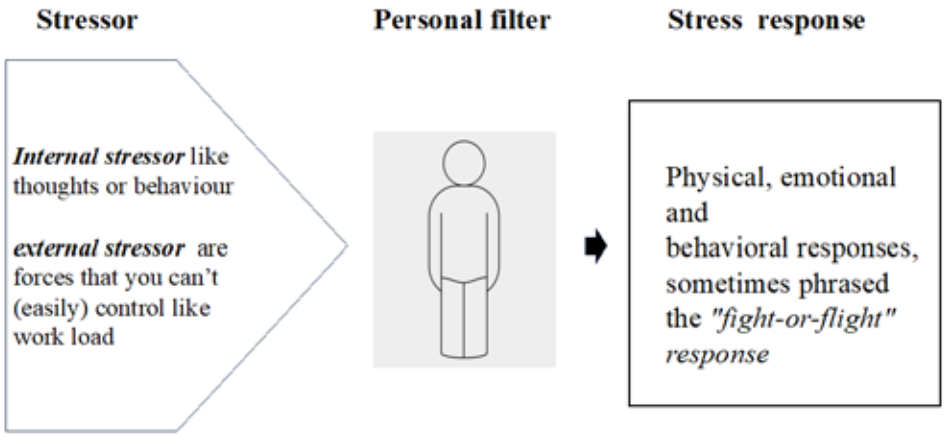
Whether a company's motive for understanding the stress within the organisation is a result of legal requirements, cultural and HR reasoning or is rooted in an operational motivation, the purpose must be settled before the required depth and scope of clarification can be defined.

3. Research Methodology

3.1. How to measure stress

The "stress sequence" consists of three elements, the factor triggering stress (stressors), the personal stress-dealing, and the stress reaction. The sequence is illustrated in Figure 1.

Figure 1. Elements of stress sequence



Some of the "stressors", both the internal and external ones, can be observed objectively, like being divorced or being overloaded with work, whereas other stressors are subjective and something a person perceives like being exposed to unfair treatment.

The response is a biological, an imagined or an emotional reaction depending on the individual person's personality or his or her personal "filter". An important distinction in observing stress is, therefore, to differentiate between the exposure (the stressor) and the corresponding response, and to understand that some of the measurements are objective whereas others are subjective. But, in both instances, stress occurs when events evoke a threat to a person's well-being, and this may cause biological or psychological strain.

3.2. Stressors

Examples of events causing stress include management style, low morale on the workplace, poor communication, employees are not included in decision-making, employees do not feel supported by their co-workers or manager, heavy workload, job expectations are uncertain or conflicting, employees feel they have too much responsibility, frequent organisational changes etc. (McCumber, 2020).

Which stressors that are relevant for the single employee are individual. In order to identify the stressors, the employer can observe the workers while at work, ask for feedback about what it is that causes stress, monitor job satisfaction or examine sick leave records. Or, in smaller focus groups the employees are invited to discuss and assess the different stressors they experience. The employee can also collect the information via individual self-reporting questionnaires or interviews of the employees. A stressor can also be determined objectively based on an immediate event in the company like an organizational change, or a major lay-off of employees.

3.3. Stress response

The stress response is experienced differently by the employees. One way to understand the stress response is by self-reporting studies like "the demand-control model" or "the effort-reward imbalance model".

As for the "demand-control model", Robert Karasek (1979) defined two factors that in combination determine work-related stress: the dimension of the quantity and nature of demands on the employee (job demand: for example tight deadlines, high targets, conflicting pressure), and the dimension of the controllability of the work task (control, or autonomy: e.g., the extent to control one's work, freedom decision) (Anforderungs-Kontroll-Modell).

According to the model high job demand combined with low decision autonomy will lead to a high-pressured job (stress) opposite to lower stress if the job demands are matched with a high degree of autonomy.

The "effort-reward imbalance model" assumes that stress occurs if an employee experiences a mismatch between the cost he/she spends at work and the gain and reward, which is received in return.

The model consists of an assessment of three components: Effort (extrinsic work demands), Reward (financial reward, status-related reward) and socioemotional or recognition reward.

The model also includes the term "overcommitment" describing when employees show "...excessive devotion to work" (Ren, et al., 2019, p. 2), which "...represents a coping pattern that reinforces the impact by high-effort, low-reward conditions" (Fahlén, 2008, p. 12) leading to stress because "...individuals with this coping style underestimate the challenging situation and overestimate their own capacity, thereby tending to expend high costs in terms of job involvement even in low-gain situations" (Fahlén, 2008, p. 13).

Based on the elements from the above two models, the "stress satisfaction offset score" model (SSOS) was developed providing individuals, on a four-item scale, to evaluate how workplace stressors influenced their health.

In this simple self-assessment model, the scale contains just one question per the four dimensions demand, control (from the "demand-control model" representing stressors) and effort and control (from the "effort-reward imbalance model" representing satisfaction). The scoring per item ranges from -2 through to +2 indicating how stress and satisfaction are offset against each other. A positive total score results in a net gain where satisfaction offsets stress while a negative score is a net loss where stress outweighs satisfaction (Shea, Cieri, 2011, p. 4), (SSOS, 2008).

Another simple self-reporting method to measure stress response is the "Perceived Stress Scale model". By asking 10 questions about feelings and thoughts during the last month, the individual's perception of their current mental state is captured to understand the person's feelings and perceived stress (PSS).

The above methods are not a conclusive listing of what could be phrased as subjective measurements of psychosocial factors' impact on employees' well-being and stress levels.

A study from the World Health Organization (2010) mentions that other models assessing psychosocial risks include the Job Content Questionnaire Effort Reward Imbalance Questionnaire, the Copenhagen Psychosocial Questionnaire, QPS Nordic: and the General Nordic Questionnaire for Psychological and Social Factors at Work (Leka, et al., 2010, p. 11). The same study lists 30 different models available to assess work-related stress, burnout and psychosocial risks using self-report measures, and 7 measures for observational measures.

The Australian university, Monash University analyzed 16 different scales used to measure workplace stress (Shea, Cieri, 2011, p. 25-36). The models covered traditional job stress scales, various questionnaires for general stress measurements, the job demand-control model, and the Health and Safety Executive (HSE) Indicator Tool model, which is an (anonymous) 35 items questionnaire with a 1-5 scoring used to assess work-related stress covering 6 work-related hazards (demands, control, support, relationship, role, and change) (MSIT, 2017).

The results from all of the listed models are derived from response, or measurement based on observation of individual persons, and only refer to the individual's state of health. That is, the results are so to say, "measuring" the response from stressors, and not trying or being able to link the observations or the state of being to a specific reason for this state of being.

Thus, the stress responses are not linked to, or being explained as a response to any specific stressor. The responses are merely registered "as such" or related to more general factors prevailing in the organization such as time pressure, general high workload etc.

Besides the above (subjective) models for psychological stress measurement, physiological measurement methods can provide accurate information from the human body. Physiological indicators such as the level of stress hormones like adrenaline and cortisol can be measured, also resting blood pressure, heart rate variability, respiration rate, skin conductance response

(skin transfer of electricity increases when we feel stressed), resting pulse, muscle tone etc. can be measured and provide information of the impact from stress.

For company purposes such physiological methods are not realistic to apply since most people will consider it as a violation of their privacy. Therefore, for the purpose of this paper, the medical or laboratory methods will not be further elaborated on. Also, such objective stress responses are also not easily applicable, if at all, to correlate with specific stressors.

3.4. Stressors are not equal

The methods which have been dealt with in the above, all tend to monitor the response to the different stressors. They do not attempt to reveal how specific stressors impact the different departments, or the different organizational functions. Or, if specific stressors impact employees differently.

Organisations want to be staffed with healthy and productive employees in order to keep up productivity and competitiveness, so from a company point of view it is of course important to know about the motivation and the "stress position" in the company. But to enable management to make optimal operational usage of such knowledge as to the organizational health and stress situation, it is imperative to have a transparent knowledge of the nature of the link from the individual stressor throughout the organisation to the individual employees.

The linkage from a specific stressor to a specific job function and employee must, therefore, be clear. If this is not the case, it will not be possible to initiate targeted means to minimize or to remove the stress either in terms of activities removing the stressors or by making organizational changes.

All stressors are not relevant to all job functions. Demanding customer requests might be perceived as stressful to an employee in the customer service department, but it does not bother employees in the accounting department. Whereas it is only employees in the accounting department, who experience serious stress due to a heavy workload and time pressure during the period of closing the annual balance sheet. Other stressors like the cultural climate in the organization may stress employees generally.

So, stressors are being perceived differently in the different business drivers.

3.5. Stressors and Business Drivers

Some business drivers contribute more to the overall company results than others. Management cannot attend to all business drivers with equal focus, but needs to concentrate on those drivers, that have the biggest effect on the business results. Consequently, and seen from a somewhat cynical business point of view, not all business functions, or business drivers, may have the same management attention when it comes to the understanding and handling of stress.

In order to maximize the organizational performance, the stress handling in the leading, or in the decisive business drivers may therefore need more focused attention than other areas of the organisation.

This point of view leads to the assumption that stress measurement, and stress handling, must be conducted with an understanding of which stressors are present in which business drivers, and how they interact with or impact the employees, who are operating in these (essential) business drivers.

As mentioned above, a general measurement and a general understanding of the stress level in the organisation may serve the purpose of meeting legal requirements (as part of fixed workplace assessments) or ensuring the fulfilment of an HR policy of securing the well-being of the employees.

However, to follow the idea of maximizing the organizational performance it is not sufficient to gain a general or an overall demographic understanding of who in the organisation has stress. Or, if some organisational positions, specific educational, or age groups are more stressful than others.

Apart from cost management, re-engineering of business processes, modernising production, reducing time-to-market for new products etc., an essential part of maximizing the organizational performance is to know and act upon the organisational stress level, especially for those who drive the key business drivers.

Knowing the stressors and their impact on the (key) employees engaged with the critical business drivers enables the management to prioritize the initiatives of removing or minimising the reasons and the effect of these stressors and thus, improve the "business health" and motivational level and ultimately fertilize the grounds for improved business results.

This opportunity is not offered by the current models for stress assessment, they are reporting the response from the stressors and are not linking this response to the employees in the individual business driver.

3.6. Stress reporting and optimized business performance

Optimizing the business performance should include a thorough understanding of the various stressors and their influence on employees, not only generally in the organisation, but especially for employees engaged in the company's key business drivers defined as a condition, a process or a (human) resource that causes the success, growth, and results of a company.

The objective is not to have an in-depth understanding of all business drivers, but the focus should be on the leading drivers having a major impact on the business results. That is, the drivers with both a high impact on value creation and a high degree of managerial controllability, or managerial influence.

To secure business performance in terms of competitiveness and productivity the different methods for stress measurement, which have been presented in this paper are not adequate.

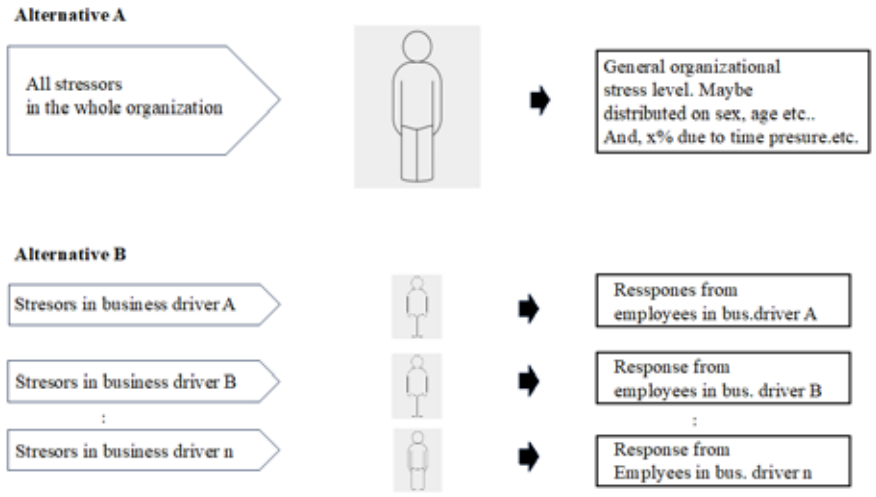
In general, it can be said that the different models measure the responses from stressors without tracking where specifically in the organizations the causes for stress originate.

Certain functions in a company are more critical to business results than others. It is therefore crucial for a company to know exactly where in the organization stress leads to the biggest performance and motivation problems. Especially for the critical business drivers, it is crucial to know which stressors affect whom, and how seriously.

The suggested model from this paper is not supposed to replace existing models for stress measuring. But since the existing models are taking a more holistic view on stress measurement and do not include a linkage between stress observation, or the stress response and what drives a business, an "amendment" to the models is suggested.

The conceptual differences between the current models and the suggested "amendment" are illustrated in Figure 2.

Figure 2. The conceptual difference between the current models and the suggested "amendment"



The difference between the two alternatives is that in Alternative B, each defined business driver is observed as an independent entity with its own set of stressors. The responses from "driver A-employees" are reported separately from the other drivers.

Instead of an overall and general view of the organizational stress perception (alternative A) without being able to pinpoint the organizational origin, alternative B traces a stress response directly back to a business driver. And since the focus should be on the decisive drivers, the finding will enable management to focus on the corrective actions they put in place to remove or minimize the stressors effect.

Having defined the organisation's key business drivers the next step will be to determine the stressors per business driver and their significance, or weight, as they appear and are perceived during the daily work by the involved workers. Such assessment can be done by using for instance a 5-point scale from "little importance" to "very important" and be done via a questionnaire or personal interviews.

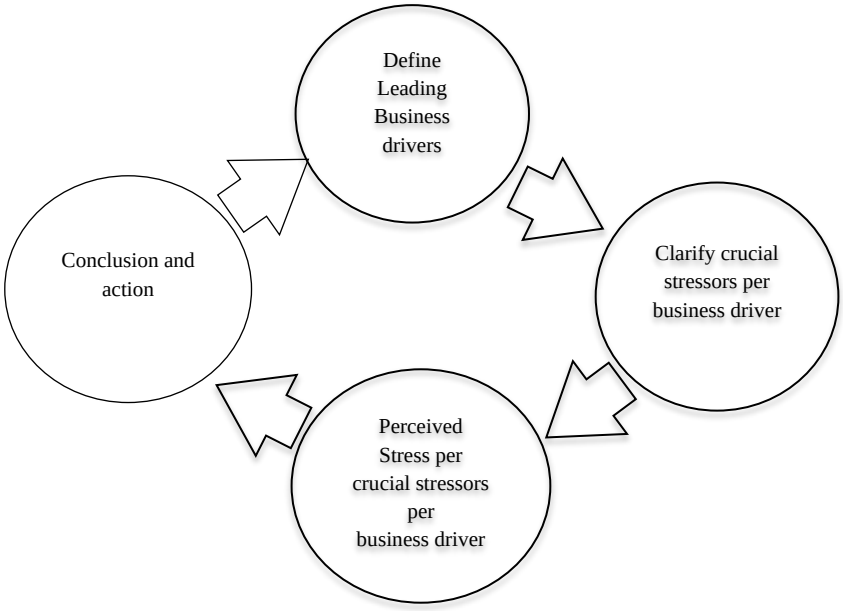
From such identification and ranking of the stressors, the study can limit the number of stressors to include only those being considered important or very important – the crucial stressors.

In the following step, each of the employees in the various drivers will on a 1-10 scale (1 = low and 10 = high) evaluate individually the stress impact per stressor. By combining (1) the weight and (2) the evaluation of each stressor it is possible to identify and rank individual stressors' impact on the stress level per business driver.

Based on these observations management can decide on a further and focused set of actions which is seen as appropriate tools to address the overshadowing stressors to remove or reduce the organizational stress and hereby pave the way for a healthier and more motivated workforce.

The process is illustrated in Figure 3.

Figure 3. Model of mapping perceived stress per business drivers



4. Results

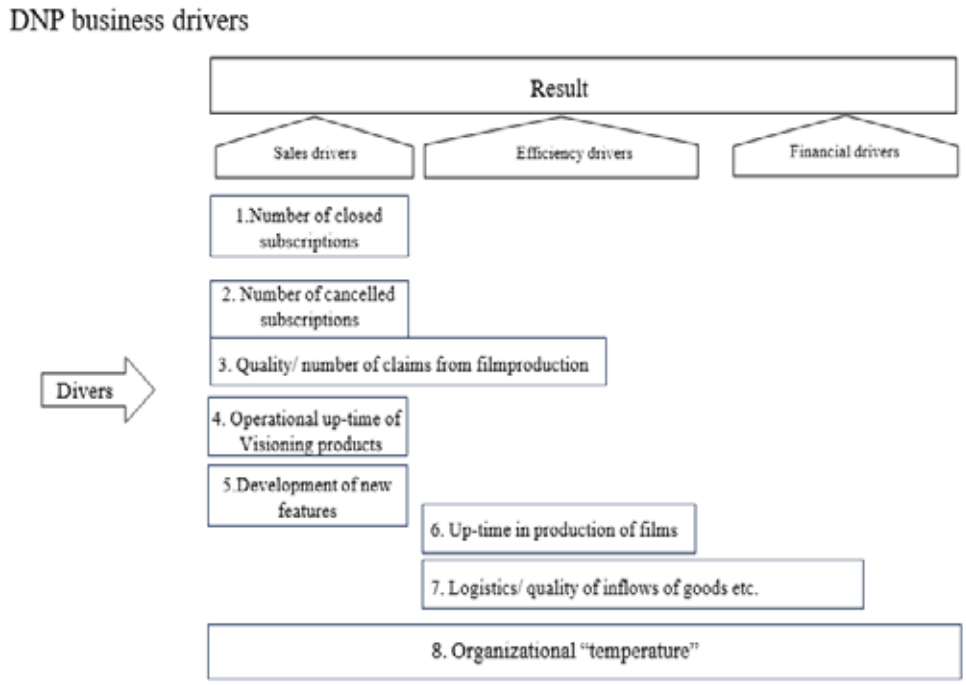
4.1. Application of the model

The said study was done with a Japanese-owned Danish company focusing on the European market offering screens, projectors and software for control rooms, TV stations and meeting rooms. The company merged at the beginning of 2023 with a newly acquired company and has recently begun contract-selling of special film for wrapping batteries. The study identified four business drivers managed by three clearly defined organizational departments, and a fifth business driver was included to map the overall motivation in the company, which would be the result of all employees' stress evaluations. Apart from all employees the departments managing the key business drivers were identified as the sales department, the department for product development and the department for production and logistics.

In the study, together with the DNP management 8 essential business drivers have been defined, – all business drivers the management/the company can influence themselves.

These 8 internal drivers can be illustrated in Figure 4.

Figure 4. Internal drivers



The explanation and comments to the DNP business drivers are illustrated in Table 1.

Table 1. Business drivers' explanation

DNP business driver	Explanation and comments	Measurement by,
Number of closed subscriptions	When a customer hasbought a Visiosign system including screen and SW they may sign-up for a support package ensuring a current possibility for online support and guidance.	Number of newcontracts signedwithin a given period.
Number of cancelled subscriptions	Support contracts/ subscriptions beingcancelled.	Number of cancelled contracts within a given period.
Quality / number ofclaims from film production	DNP supplies film to manufacturers of batteries and solar panels. One of such manufacturers is the German LG Group, which supplies their batteries to e.g. the carindustry. If problems occur in a car (e.g. a fire) because of a batteryfrom LG, DNP must document that the product sold to LG meets approved specifications. Thus, DNP must both ensurethe approved quality and also be able to document the quality.	Number of receivedcomplaints. Number of receivedcomplaints where documentation of product quality cannot be confirmed.
Operational up-time of Visiodesign products	Customers expect no"black screens", but operational up-time whenever required.	Number of receivedcomplaints.
Development of new features	There exist two kindsof developments: 1. product development meetingcompetitor's specifications. 2. product development (e.g., new application, or SW) exceeding competitor's productfeature, i.e., demonstrate competitive advantage	Reported lost sales because of not having competitive products.
Up-time in the production of films	The objective for thefilm production is a 24/7 up-time	Number of shot-down-hours in a given period.
Logistics/quality inflows of goods etc.	The inflow of components for production (raw materials, packaging material etc.) should meet the ordering as placed with suppliers. Also, DNP re-uses transport packaging and has clear targets for a number of transport circles per single transport "vehicle" like the single pallet.	The amount in DKK was a result of wrong deliveries. Number of pallets re-used less times as outlined in the policy.
Organizational "temperature"	The number of staff has more than doubled after the coronavirus epidemy. The physical moving together and the organisational merge of the old DNP and newly acquired Visiosign, and also completely newly hired employees means that staff isn't culturally homogeneous. Organizational ease is important and good cooperation is essential for the company's results.	Overall financial business result

The company's focus should be on 4-5 leading drivers, which all meet five criteria. They are illustrated in Table 2.

The idea of this table is to clarify whether the individual business drivers meet the different criteria, or not. Only if a business driver meets all five criteria it will be selected and carried forward in the study.

Table 2. Business drivers meeting selection criteria

Selection Criteria	Reflect on the performance and progress of the business	Are measurable	Can be compared to a standard	Can be managed and acted upon	Drives customer satisfaction
Business drivers					
Number of closed subscriptions	+	+	+	+	-
Number of cancelled subscriptions	+	+	+	-	+
Quality/number of claims from film production	+	+	+	+	+
Operational up-time of Visiodesign products	+	+	+	+	+
Development of new features	+	+	+	+	+
Up-time in the production offilms	+	+	+	+	-
Logistics/quality inflows ofgoods etc.	+	+	+	-	-
Organizational “temperature”	+	+	+	+	+

From Table 2 it appears that only 4 of the business drivers meet all five selection criteria:

- Quality/number of claims from film production;
- Operational up-time of Visiodesign products;
- Development of new features;
- Organizational “temperature”.

The driver “Number of closed subscriptions” does not meet all of the five criteria. However, since it has a major influence on especially future business performance (growth, sales, – and company results) this driver will be included as well.

Having defined the key business drivers, the corresponding departments were asked which stressors they saw as stress-causing factors. The employees were also asked how they perceived the importance or the weight of each of these stressors. The perceived importance of the individual stressor was defined according to a 1-5 scale: 1 = No importance at all; 2 = Hardly any importance; 3 = Some importance; 4 = Great importance; 5 = Significant importance.

The perceived stress level in each of the departments was then measured at 3-month intervals by usage of a 5-point scale. The scale used: 0 = no stress from the stressor; 1 = barely any stress perceived from the stressor; 2 = slight stress perceived from the stressor; 3 = a lot of stress perceived from the stressor; 4 = Extremely much stress perceived from the stressor.

Prior to these two stress observations, the management of the company had defined how they would measure the results from each of the business drivers. For instance, should the result from the business driver, which was managed by the sales department be measured by the number of new customer contracts?

Knowing the business result and the perceived stress level at the time of the first and the second observation, it was now possible to compare how the two sets of figures had dev Together with the DNP management the different organizational functions or departments' occupational involvement and direct influence on the selected business drivers has been defined.

The aim of such an allocation is to clarify which organizational function has the primary contribution to which business driver. The allocation will of course be somewhat arbitrary since employees are not working only in one single and "isolated" role. But even if employees are working together in a cross-organizational structure, some employees and their organizational function will be the main contributors to different business drivers.

In the Table below, the result of this allocation is presented.

Table 3. Primary organizational contributor per selected DNP-business driver

Selected Business driver	Organizational contributor/ department
Quality / number of claims from film production	Production and logistic
Operational up-time of Visiodesign products	Product development
Development of new features	Product development
Number of closed subscriptions	Sales/ customer relations
Organizational "temperature"	All departments

4.2. Reported stressors

All the departments listed the same stressors as important for potential stress: job insecurity, time pressure, bad culture in the company, too many organizational changes and too many tasks.

However, the ranking and the importance of the stressor's potential impact on the employees' stress level differed from the different departments:

Table 4. Department-level employees' stress

Business driving departments	Most important stressor	Second important stressor
Whole company	Insecure job situation	Bad culture Time pressure
Product development	Time pressure Too many tasks	Too many organizational chg.
Production department	Too many tasks	Time pressure/too many organizational chg./bad culture
Sales department	Insecure job situation	Time pressure

Having measured the perceived stress levels at the two points of time it was concluded that all departments had experienced an increased stress level from the first to the second observation.

Also, the business results from each of the business drivers developed negatively together with the increased stress level.

The overall conclusion from the study was that from the first to the second observation the organization had experienced an increased perception of stress, preliminary because of the psychological stressors “insecure job situation” and “too many organizational changes”. The last point was not particularly surprising since the company actually went through a major organizational change following the merger of the newly acquired company.

Traditionally the stress level within a company is reported as a result covering the whole company. In such a case the above conclusion would probably have led to managerial actions focusing on the issues related to the above psychological stressors alone. However, because of differences in the departmental perception of the reasons behind the reported stress figures such an approach would not solve the matter efficiently and would not pave the road for better business performance.

The negative development in the business results was especially caused by a negative development in “the number of new customer contracts”, which was the defined measurement for the performance of the business driver managed by the sales department.

That is, the department which had also experienced the highest development in perceived stress.

In this department, the reported reason for increased stress was not only referring to the above psychological stressors. Also, bad collegial relations and bad management impacted the development.

Such more specific findings would not have been detected using a traditional “overall” study evaluating a company as one unit, and not separating the findings into individual organizational units like the current study does. Without having detected the issue of bad collegial relations, the management would not know or see an immediate necessity for addressing this issue, but instead concentrate on solving the overall issue related to “insecure job situation” and “too many organizational changes”.

In the department for product development, the increased stress level was not seen as a result of the above-mentioned psychological stressors “insecure job situation” or “too many organizational changes”. This department felt more stressed because of “too much time pressure”. This means that management would have a different issue to address in this department.

By applying the suggested model and focusing on key business drivers, the management has been made aware of not only the “overall” issues of “insecure job situation” or “too many organizational changes” but also the problem of collegial “clashes” in the sales department, and too much time pressure in the department for product development. The management would hereby be able to address, and hopefully, also be able to prevent an acceleration of an

unwanted situation with an increased stress level, but instead secure an organizational basis with heathy and motivated employees to improve business performance.

5. Conclusion

Humans drive business results, humans get stressed, and stressed humans are impacting business performance negatively via their loss of motivation and hereby reduced contribution to the result from the business drivers, where they are working.

Stress observation must therefore not only measure the response from stressors.

Even additional demographic information or the adding of reasons for stress like mentioning general stressors such as time pressure or job insecurity are not especially helpful when companies try to understand and improve organizational health and motivation to maintain competitiveness and productivity. Businesses need relevant information to address and remove "serious, business-hampering" stressors to secure a healthy and motivated staff.

Businesses must have information enabling them to initiate focused measures to target those stressors, which are seen as the major obstacles to business results.

Stress measurements must therefore identify those stressors, which are blocking optimal progress, especially the key processes, or in the key business drivers.

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