Human Factor Drivers of Change Readiness: A Targeted Approach to Change Success

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ABSTRACT

The growing complexity of managing humans during change is evident in the increasing levels of uncertainty and risk. This research aimed to determine which two human factors drive change-ready individuals and to what extent. The researcher used a quantitative cross-sectional survey research design and convenience non-probability sampling method to determine change readiness. The validated change readiness survey was distributed on social media platforms between June 27 and July 9, 2022. The results included data from 112 participants whose average change readiness score was 7.8/10. Human factors that drove change readiness included resourcefulness (47.3%), confidence (34.8%), and optimism (30.4%). Those who were 10/10 change-ready were more likely to be confident (59%), females (93%), in age groups 18 – 25 and 58 – 67 years (30% respectively), and hold Master’s degrees (33%). On average 1.7 human factors drove change at any one time, which increased to 3.5 human factors in those who were most change-ready. This research confirms a positive relationship between two core human factors and change readiness, namely resourcefulness and confidence. Change-ready individuals driven by resourcefulness and confidence have the potential to be strategic change agents and catalysts for project and change success. The result of this study can be replicated to generate a snapshot of change readiness with minimal effort and inconvenience and help to position the most change-ready individuals in roles of critical importance.

Keywords: Change management, Change readiness, Human factors

1 Introduction

Increasing globalization and pandemic states of emergency have fueled changes in the global workforce. Change is complex, interconnected, challenging, and always present (Mekonnen & Bayissa, 2023). However, change is also essential for the growth and transformation of people and organizations (Pahwa & Rangnekar, 2023). In this overview, we will introduce the connection between human change and change management, discuss the factors that influence organizational and individual change success, the importance of change readiness, and the impact of human factors on change.

Change management and project management are terms often used in organizational strategic plans. These two disciplines complement each other to ensure the long-term sustainability of change, yet they are uniquely different. Project management is well-established and widely used. Project management involves the process and activities of pushing the product through stages and driving it forward, change management focuses on the people and how the project may affect or change them (Ciccotti, 2014; Petersen, 2013). These are the complementary technical and behavioural components of overall management.

Change management is a newer concept, still emerging and developing, yet crucial to change success. Change management involves a combination of individual and organizational factors (Chen et al., 2023), one key factor with the highest risk is human behaviour. Humans can make or break a project. An estimated 70% of change initiatives fail, largely due to human behaviour (Albrecht et al., 2020; Connelly, 2020; Mason,
2021; Nohira & Beer, 2000), and the impact does not stop there. It is estimated that half of the project costs are determined by social and human factors (Cooke-Davies et al., 2007).

The divestment in the change process can lead to major disengagement and profound consequences (Palwah & Rangnekar, 2023). Exploring what drives the adoption and sustainability of change in humans is of value to change agents, leaders, organizations, and project managers (Mekonnen & Bayissa, 2023). Knowing that successful change contributes to a reduction in project costs (Cooke-Davies et al., 2007), increases the quality of deliverables, reduces the time for implementation, and ensures the sustainability of the change in the long term (Antony et al., 2023; Belack et al., 2019; Giccotti, 2014; Donnelly, 2017).

Change readiness can be viewed as the intention of the participant to either support or resist the change (Gundersen, 2020). Change requires adjustments along a spectrum with those affected by change positioned at various points along the line (Hubbart, 2023). The shift from one side (resistance) to the other (acceptance) occurs when the change's driving forces overpower the change's restraining forces (Udod & Wagner, 2018). This change readiness does not happen without a major shift in individual readiness, confidence, and ability, and can often depend on commitment and culture, especially in the workplace (Antony et al., 2023). It requires a shift in thinking and behaviour; liberation of the old way of doing and thinking, to make way for the new (Connelly, 2020). Change readiness is largely determined by human factors.

Human factors are the body of knowledge that studies people at work in relation to human limitations, abilities, and characteristics. Human factors scholars study humans and engineer human-focused processes to ensure efficiency (Antonovsky et al., 2021), which has been widely adopted and applied to various disciplines including aviation, healthcare, technological interfaces, product development, and construction (Chen, 2020; Giccotti, 2014; Ede et al., 2021). A well-designed environment, using human factors research, can act as a catalyst for successful change.

There are seven human factor drivers of change-readiness, these include resourcefulness, adaptability, optimism, confidence, adventurousness, tolerance for ambiguity, and drive/passion (Kriegel & Brandt, 1997). According to the literature (Giccotti, 2014; Sinek, 2019), only two human factors variables are fundamental, and key drivers of change at any one time in each individual. To date, there is no published literature to indicate which two factors. There is also no evidence exploring the relationship between change readiness and the human factor drivers of change. This limits the ability to focus change management on the most important factors that determine success.

### 2 Literature Review

The literature on change readiness was studied in-depth in an integrative literature review of 8 databases (PubMed, ProQuest, Google Scholar, Cochrane, EBSCO, TRIP, ACCESS, and CORE). The search produced 89 results, of which 57 were excluded after abstract review, and a further 19 were excluded after full-text review. The remaining 13 articles (Ahmed et al., 2019; Al-Maamari et al., 2018; Aziz, 2018; Boone, 2010; Ead, 2015; Husin & Khairudin, 2019; Kapoor, 2018; Kho et al., 2020; Mlekus et al., 2018; Singh, 2021; Spence, 2020; Tait-Fries, 2021; Vaishnavi et al., 2019) were appraised and revealed five primary outcomes including 1) change readiness, 2) the human-environment interface, 3) education and training, 4) resistance to change, and 5) change as being useful and usable. Less common themes that were found in the included articles were resilience, critical mass, work diversity, communication, and change fatigue.

Change readiness, resistance to change, useful and useable change, education and training, and how the individual interacts with the environment are interdependent and connected along a spectrum of change. These broad concepts are important to consider when implementing change and key elements in change management.

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2.1 Change Readiness

Change readiness can be defined as the decision to either support or resist the change initiative (Vaishnavi et al., 2019). This author proposes that engaged employees are change-ready employees; they are willing, motivated, and accepting of the change (Vaishnavi et al., 2019). Their optimism affords them a positive outlook and the ability to recover from the change and any associated adversity (Tait-Fries, 2021) as well as the ability to rapidly adapt to future challenges (Tait-Fries, 2021). In business, change readiness was enhanced by changes that improved performance, efficiency, or control over tasks (Ahmed et al., 2019). Attitudes, beliefs (Vaishnavi et al., 2019), trust, and user perspective were evident in these change-ready employees, as was trust in management and a healthy work environment (Ahmed et al., 2019). Of importance is that organizations have a role in creating the structures and processes that foster change readiness, including strategically designed change plans that are effective and reduce complexity (Vaishnavi et al., 2019), and creating spaces that improve staff morale (Singh, 2021).

2.2 Human-environment Interface

The interface is the point of contact between the person and the environment; this dynamic interaction is always changing. It is in this space where the person first experiences the effect or disruption (Kho et al., 2020) of change and makes a conscious decision to either support or resist it (Vaishnavi et al., 2019). The potential to create a positive outcome when interacting with the environment is dependent on the person’s potential and psychological capacity (Tait-Fries, 2021). Without the mental and physical potential (Ead, 2015) the individual is likely unwilling to unable to participate and adopt the new behaviour needed for the change to occur (Ahmed et al., 2019). The ability includes the attitude and awareness that there is a need for change (Singh, 2021), and a sense of value that the change has an individual meaning and satisfaction (Mlekus et al., 2018), and is personalized (Kapoor, 2018).

2.3 Education and Training

Lack of education and training is known to contribute to change failure (Vaishnavi et al., 2019). By planning and implementing sufficiently focused training before change initiation, employees may feel more aligned with organizational priorities, and better prepared for the upcoming changes. Training can eliminate obstacles and create motivation from the ground up, rather than the top-down approach (Boone, 2010). There is value in including employees in the planning stages for change as a way to increase buy-in and ensure that the change is relevant to them (Boone, 2010; Vaishnavi et al., 2019). When educating people on change, it can be presented as a trial instead of a mandate, this secures certainty, trust, and productivity (Boone, 2010). These early discussions and strategies encourage bilateral communication and engagement. Of importance is that training for change has been linked to readiness for change, and is a product of a change-supportive environment (Singh, 2021), making it a critical component in change comfort and adoption.

2.4 Resistance to Change

Change implementation is often ad-hoc, reactive, and retrospective (Kho et al., 2020). Resistance to change is well-studied and is known to result in project and change failure (Pahwa & Rangnekar, 2023). Some authors propose that it has less to do with strategic planning, and more to do with the emotions that an individual attaches to the change that determines the resistance (Kho et al., 2020; Spence, 2020). Emotion intelligence is the capacity to identify and understand one’s own and others’ emotions (Spence, 2020). This collective understanding, or social collectivism, knowing what others are feeling has a ripple effect, and contrasts individualism which separates entities. The more individuals who support the change, the more others will follow and support the change (Spence, 2020). Unfortunately, the same is also true for resistance. To sustain the forward momentum of change and minimize resistant behaviours, employee morale should be monitored frequently with regular check-ins and open discussions, knowing that low morale is associated with resistant behaviours (Singh, 2021).
2.5 Change as Useful and Usable

What is change if it is not useful or useable? It would likely be seen as redundant, useless, and irrelevant. The usefulness of change lies in the end product and if it is useable to the end-users. Leveraging these change outputs (Ahmed et al., 2019) in a future-forward approach (Kho et al., 2020) is a key factor in change success. If the change is not useful, it likely won’t be supported or sustained. Half of the variance in the perception of ease of use and usefulness can be explained by employee readiness (Ahmed et al., 2019). The more ready a person is, the more useful they will find the change. Ensuring that change is useful and useable requires identifiable results, key outputs, and the inclusion of those affected in how these outputs are determined and measured (Mlekus et al., 2018). The benefit of this is that those who are most affected by the change have an input in their work environment and the opportunity to participate in decision-making. This can create a positive collaborative environment where the change results are useful, useable, and self-sustain by those who are affected most.

In summary, humans are the biggest factor to consider when managing change. Change can be successful even in complex environments and uncertain times. The key is to follow strategic steps in planning, implementing, and evaluating the change process and transforming it into a newly improved state. A deep understanding of change and what drives individuals and creates meaning for them is essential. To add a layer of understanding to the change process, five factors on the change continuum have been outlined in the review of literature, namely, understanding change readiness, ensuring a favourable interface between humans and the environment, mitigating resistance to change, making sure change is useful and useable, and allowing sufficient time and resources for education and training. These factors have been identified in the published literature as the difference between change success and failure.

The purpose of this research is to determine which human factors drive change readiness in most individuals and measure the relationship between the seven human factors and change readiness. This has value for agents of change, change managers and project managers who strive to improve success in change management.

3 Materials and Methods

The researcher used a quantitative cross-sectional survey research design and a self-completed 35 Likert scale questions validated survey (Kriegel & Brandt, 1997). The survey questions ask about participants’ behaviours, how they respond to certain situations, and how they view themselves. Examples include: “I prefer the familiar to the unknown; I can’t wait for the day to get started; I push myself to the max; I focus on my strengths, not my weaknesses.” See supplementary material: change readiness survey. All questions were marked as mandatory to avoid non-response bias and missing data.

A convenience non-probability sampling method was used. The inclusion criteria for this study incorporated people all ages, geographic locations, and demographic categories. Participants required a good understanding of the English language to complete the survey, needed access to social media, and where required to read and complete an informed consent form. Exclusion criteria from participating in this study was submission of incomplete surveys. Anonymity and confidentiality were assured to encourage truthful responses. Checks for irrelevant content, data consistency, and filters for duplicates were used to validate the authenticity and assess for invalid or suspicious responses.

This survey was distributed on Facebook (Project Management Group, Change Management Groups, and Expatriate groups) and LinkedIn social media platforms for three weeks. The survey period of three weeks was calculated based on the likelihood of receiving a response. The ideal sample size for this study was calculated as being between 70 and 120 participant responses, and at least more than 106 participants (LeBlanc & Fitzgerald, 2000), (Burmeister, 2012; Green, 1991). No incentives were offered in exchange for participation.

Descriptive data analysis was performed using Microsoft Excel Version 2209 and IBM® SPSS® Statistics 29, which included measures of central tendency, prevalence, and dispersion via graphs and tables.
Due to the non-random, non-probability nature of the data, inferential statistical analysis of correlation, error, or confidence was not possible (Baker et al., 2013; Hirschauer et al., 2019; Trafimow et al., 2018; Williamson, 2003).

4 Results

Data collection occurred between June 27 and July 9, 2022, via eight social media groups targeting 187,094 individuals in total. 112 responses were collected, meeting the sample size requirements discussed in the methodology section. There were no missing data, and all responses were accounted for, reducing nonresponse bias.

4.1 Demographic Data

Demographic questions included sex, age, education level, and perceived readiness for change on a scale of 1 to 10 (10 = completely ready for change, 1 = not at all ready for change). Change was defined as the ability to continuously adapt to changes in a positive way.

Demographic details of the sample population showed that the majority of survey participants were female (83.9%), between the ages of 18 and 25 (28.6%) and were master’s prepared (42.9%). Only three survey participants had no education, and only one was PhD prepared. Almost one-quarter of participants reported that they were 10/10 change ready (24.1%), and another quarter reported 8/10 change readiness, as illustrated in Figure 1. The average perceived change readiness score was 7.8/10 for this sample population (N=112).

The highest perceived change readiness scores were noted in females, in age groups 18 – 25 and 58 – 67 years, and those with Master’s degrees. Females were on average more change ready than males, and those aged 58-76 years were on average the most change-ready 9/10, with change readiness scores decreasing with age. The average perceived change readiness score for level of education was the highest in the ‘other’ education group, followed by ‘trade/technical/vocational training’ group.

The last question in the demographic data asked participants to select two of the seven human factors that they thought drove them most in situations of change. Most participants selected optimism (43%) and resourcefulness (40%) as their key drivers of change.
4.2 Descriptive Statistics

Descriptive data included human factors and change-ready scores. There were seven human factors measured in this survey, namely resourcefulness, adaptability, optimism, confidence, adventurousness, tolerance for ambiguity, and passion/drive. The single human factor mean that fell within the optimal range of 22-26, indicating change readiness, was resourcefulness. Just outside of the optimal range were mean confidence, followed closely by mean passion/drive and optimism. Much lower mean scores were seen in adaptability, adventurousness, and tolerance for ambiguity. Table 1.

<table>
<thead>
<tr>
<th>Human Factor</th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Mode</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resourcefulness</td>
<td>112</td>
<td>18</td>
<td>12</td>
<td>30</td>
<td>22.8</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Adaptability</td>
<td>112</td>
<td>19</td>
<td>9</td>
<td>28</td>
<td>15.9</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Optimism</td>
<td>112</td>
<td>25</td>
<td>5</td>
<td>30</td>
<td>19.1</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Confidence</td>
<td>112</td>
<td>23</td>
<td>6</td>
<td>29</td>
<td>20.0</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Adventurousness</td>
<td>112</td>
<td>20</td>
<td>7</td>
<td>27</td>
<td>16.7</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Tolerance for Ambiguity</td>
<td>112</td>
<td>19</td>
<td>6</td>
<td>25</td>
<td>13.4</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Passion/Drive</td>
<td>112</td>
<td>22</td>
<td>7</td>
<td>29</td>
<td>19.5</td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>

All participant scores for each human factor were calculated and plotted on a graph to illustrate all responses graphically in Figure 2. This line graph shows the variation in the 112 participant responses with noticeable patterns of peaks and troughs following similar pathways. The majority of scores for each category of human factor lie below the optimum 22 to 26 (change-ready) green-shaded area.

Figure 2: Graphic Representation of Human Factor Scores from Participants (N=112)

The trend of all participants’ responses. The green area is the change-ready zone.
A subset analysis was conducted on participant responses that fell within the 22-26 range (indicating change readiness). The human factors frequency data for this subset showed that 47.3% of resourcefulness responses fell within the optimal range, and 34.8% of confidence and 30.4% of optimism responses were also within this range, see Table 2. This indicated that in the total survey population, almost half of the participants were driven in change by resourcefulness, and more than one-third were driven by confidence.

**Table 2: Optimal Range Human Factors Subset (scores between 22-26)**

<table>
<thead>
<tr>
<th>Human factor</th>
<th>n (%)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Change ready mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resourcefulness</td>
<td>53 (47.3)</td>
<td>22</td>
<td>26</td>
<td>24.09</td>
<td>8.21</td>
</tr>
<tr>
<td>Adaptability</td>
<td>11 (9.8)</td>
<td>22</td>
<td>26</td>
<td>22.91</td>
<td>8.36</td>
</tr>
<tr>
<td>Optimism</td>
<td>34 (30.4)</td>
<td>22</td>
<td>26</td>
<td>24.12</td>
<td>8.29</td>
</tr>
<tr>
<td>Confidence</td>
<td>39 (34.8)</td>
<td>22</td>
<td>26</td>
<td>23.85</td>
<td>8.79</td>
</tr>
<tr>
<td>Adventurousness</td>
<td>20 (17.9)</td>
<td>22</td>
<td>26</td>
<td>23.75</td>
<td>8.45</td>
</tr>
<tr>
<td>Tolerance for Ambiguity</td>
<td>3 (2.7)</td>
<td>22</td>
<td>26</td>
<td>23.67</td>
<td>8.67</td>
</tr>
<tr>
<td>Passion/Drive</td>
<td>32 (28.6)</td>
<td>22</td>
<td>26</td>
<td>23.69</td>
<td>8.66</td>
</tr>
</tbody>
</table>

When the human factors of the survey data that fell within the optimal range were compared to the human factors that participants thought drove them most (Table 3), the data differed. The participants believed that optimism was their primary driving factor, while the survey calculated that resourcefulness was the primary driving factor in change. In addition, participants perceived themselves to be more optimistic and adventurousness, and less resourceful and confident than what the survey results indicated.

**Table 3: Self-reported Human Factor that was the Strongest Driver of Participant Change**

<table>
<thead>
<tr>
<th>Human factor</th>
<th>Survey data in optimum range (22 – 26), n (%)</th>
<th>Self-reported driver of change n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resourcefulness</td>
<td>53 (47)</td>
<td>45 (40)</td>
</tr>
<tr>
<td>Adaptability</td>
<td>11 (10)</td>
<td>38 (34)</td>
</tr>
<tr>
<td>Optimism</td>
<td>34 (30)</td>
<td>48 (43)</td>
</tr>
<tr>
<td>Confidence</td>
<td>39 (35)</td>
<td>22 (20)</td>
</tr>
<tr>
<td>Adventurousness</td>
<td>20 (18)</td>
<td>33 (29)</td>
</tr>
<tr>
<td>Tolerance for Ambiguity</td>
<td>3 (3)</td>
<td>7 (6)</td>
</tr>
<tr>
<td>Passion/Drive</td>
<td>32 (29)</td>
<td>38 (34)</td>
</tr>
</tbody>
</table>

### 4.3 10/10 Change Ready Participants Data

The data were further sorted into a sub-group of only those participants who rated themselves as 10/10 change ready and whose human factors fell within the optimal range of 22 to 26. This subgroup of 27 was studied to explore what human factors drove them to be so well adapted to change. In this sub-group, 93% of participants were female, 30% were between the ages of 18 and 25 years, and a further 30% were between 58 and 67 years old. 33% had a master's degree and 30% had a bachelor's degree.

**Table 4: Human Factors Driving the most Change Ready Participants**

<table>
<thead>
<tr>
<th>Human Factor</th>
<th>n (%)</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resourcefulness</td>
<td>27 (24.1)</td>
<td>11</td>
<td>19</td>
<td>30</td>
<td>24.81</td>
</tr>
</tbody>
</table>
The average number of change-ready factors that drove these individuals were more than two times higher than the sample population (3.50 versus 1.71 factors for each individual). Almost all were female (92.6%) and 60% had a bachelor's or master's degree. In this group, two human factors' means fell within the optimal range, resourcefulness and confidence, as seen in Table 4.

When comparing the perceived human factor drivers of change to those calculated from the survey to be within the optimal range, there were also differences, as seen in Figure 3. However, the most reported human factor that drove these participants was confidence, the same as what the survey data calculated.

### Table 4: Human Factor Drivers of Change Readiness

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sample Mean</th>
<th>Sample SD</th>
<th>Survey Mean</th>
<th>Survey SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>27 (24.1)</td>
<td>16</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Optimism</td>
<td>27 (24.1)</td>
<td>21</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Confidence</td>
<td>27 (24.1)</td>
<td>10</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>Adventurousness</td>
<td>27 (24.1)</td>
<td>19</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Tolerance for Ambiguity</td>
<td>27 (24.1)</td>
<td>16</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Passion/Drive</td>
<td>27 (24.1)</td>
<td>13</td>
<td>16</td>
<td>29</td>
</tr>
</tbody>
</table>

**Figure 3: Perceived Versus Calculated Human Factors that Drive Change-ready Participants**

Comparison between self-reported human factors data and survey human factors data. Change-ready participants, however, reported themselves to be much more driven by adventurousness, optimism, and adaptability, and less by resourcefulness as the survey calculations revealed. These change-ready participants also had zero tolerance for ambiguity and the survey calculations revealed that they were less adaptable and adventurousness than they perceived.

### Discussion

This research sought to determine which human factors drive people to be change-ready and to what extent. The goal was to generate a greater understanding of human behaviour in change management to increase the chances of change success.

In this survey population of 112 participants, most perceived themselves to be more ready for change, noting an average self-reported change readiness score of 7.8/10. This research sample was sourced from social media groups where many participants were members of ex-pat and academic groups who may have experienced a recent/imminent major life change, which may have made them more open and ready for change.

Those participants who ranked themselves as being 10/10 change ready were highly likely to be females, in age groups 18 – 25 and 58 – 67 years, and those with Master's degrees. Across all change
Evidence has shown that self. This is consistent with the results of this study, showing 10/10 change.

When benefits or payoffs aren’t apparent, or change takes time and energy, males tend to display a higher level of resistance to change. In contrast, if goals are harder to meet, females resist change (Vally, 2005).

Women are well known to be highly adapted to change. Companies, where women are leaders, perform better financially, generating up to 50% higher profits (Clemente, 2022). Women in leadership are drivers of solutions, according to the UN Secretary-General, who goes further to state that climate action will not succeed without women (United Nations, 2022). Women appear to play the role of change-makers, shifting nimbly to maintain the balance between the competing tensions, and ultimately becoming change masters and drivers of change solutions (Goughlin, 2019). Furthermore, irrespective of sex, adopting a transformational leadership approach can increase organisational change commitment and efficacy in healthcare settings (Mekonnen & Bayissa, 2023).

The average age of change readiness varied in this sample, especially for those who were most change-ready. Both younger and older groups ranked themselves 10/10, but on average, change readiness decreased with age across the whole sample. There is very little information published about age-related change readiness. One study noted that contrary to stereotypes, the older the age of an individual, the less resistant they are to change (Kunze et al., 2013). This pattern was confirmed by Mardhatillah (2020), who also found that the older a participant was (over age 50 years), the more ready for change they were (Mardhatillah & Rahman, 2020). This is consistent with the results of this study, showing 10/10 change-ready scores in the age group 58–67 years.

However, what was different in this study was that an additional younger change-ready group was identified. Those participants between the ages of 18 and 25 also indicated that they are 10/10 ready for change, which is an emerging generation of young adults, often known as millennials. This generation exhibits unique approaches and has high expectations. Supporting these young change-ready individuals by leveraging their confidence, resourcefulness, and digital savviness could be of advantage in actioning change. Of interest, evidence has shown that self-efficacy and personal valence facilitate digital change readiness (Haffar et al., 2023); traits that have been found in youth (Kowalski et al., 2014).

The demographic data showed that the higher the education level, specifically those with Master’s degrees, showed the highest change readiness scores (10/10). Similarly, other studies have shown the same. It has been documented that higher academically educated individuals are also more ready for change (Mardhatillah & Rahman, 2020) and irrespective of age, show higher readiness for learning and development (Barrosiewicz et al., 2019).

This research also confirms the theory by Ciccoitt (2014) and Sinek (2019), that only two human factors are key drivers of change at any one time in the majority of individuals (Ciccoitt, 2014; Sinek, 2019). In the larger sample, an average of 1.7 human factors drive change at any one time. In the most change-ready participants subset, this number increased to 3.5 factors driving them to change at any one time. This could indicate that the more human factors an individual has developed to help them cope with change, the more ready for change they will be. It is unknown how these factors are developed, the assumption would be over time, noting the average age of the change-ready groups, and with higher education. Future research is recommended to explore this further.

In the 10/10 change-ready group, there was less discrepancy between the human factors that the survey found drove participants in change, and that which the participants self-reported to drive them. It appears that individuals who use more human factors and are change-ready have a more accurate perception, and greater awareness, of what drives them to change. Being more attuned to what factors assist them through times of change is an asset, allowing them to engage different human factors at different times to meet their needs and manage the disruption.
These human factors, resourcefulness and confidence, could therefore be seen as key behavioural performance indicators of change readiness, which could help to focus change management strategies on specific human factors with the highest likelihood of influencing change success. Resourceful people are self-assured, able to adapt well to new situations and think creatively while keeping an open mind. Resourcefulness can be nurtured by organizations and leaders through shared collaboration, partnerships, venturing growth and shared governance. Creating an environment of interdependence and support enhances change success (Deng et al., 2023). Confident people feel sure about themselves and are realistically and securely aware of their abilities. They accept and trust themselves to have control in their life, know their strengths and weaknesses, and can handle criticism well. Building confidence in individuals involves building knowledge and/or building experience. The more confidence, the more willing an individual is to participate. Other research has identified intentional behaviour as a driving factor in change readiness (Pahwa & Rangnekar, 2023).

Using this human factors knowledge, organizations can build change readiness by clearly communicating change intentions (Hubbart, 2023) and culturing an environment of teamwork (Ellis et al., 2023). Change managers can then position the most change-ready individuals in strategic positions within the organization to ensure the most successful, cost-effective, on-time, and on-target approach to change management.

Change is part of our everyday lives. The pace of change has resulted in the need to create and integrate innovative solutions and strategies to effectively manage and promote progressive change. We know that human factors influence change, either driving it forward or resisting it. If change is managed correctly, positive drivers of change can act as catalysts allowing for earlier adoption and change realization. This requires an awareness of the interaction between humans and the environment, how this space may affect change readiness and an understanding of how education and training can play a role in mitigating resistance to change.

### Practical Implications

Using the results from this survey and focusing purely on the five resourcefulness and five confidence questions taken from the original change readiness survey, a score could be generated that would assess only resourcefulness and confidence as the most important predictors of change readiness. This transforms a 35-question survey into a 10-question mini-survey that would be easier to administer at intervals during the project timeline, illustrated in Table 5.

### Table 5: A Focused Assessment for Change Success

<p>| Circle the number beside each statement that reflects how accurately the statement describes you. |</p>
<table>
<thead>
<tr>
<th>1 = Not Like Me</th>
<th>6 = Exactly Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I rarely second-guess myself</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. If something’s broken, I try to find a way to fix it</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. I can make any situation work for me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. When I get stuck I’m inclined to improvise solutions</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. I can handle anything that comes along</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. When people need solutions to problems, they call on me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>7. I focus on my strengths, not my weaknesses</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>8. My strength is to find ways around obstacles</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>9. My trust in my abilities is unshakable</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. I look in unusual places to find solutions</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

Legend: Resourcefulness, white-shaded questions; Confidence, grey-shaded questions.
The optimal range for change readiness for each human factor would again be between 22 and 26.

This condensed version of the broader survey could be more easily integrated into digital surveys and automated via existing platforms and tools.

Regularly assessing change readiness using this 10-question focused change readiness survey could assist individuals, leaders, and organizations to predict if a project is feasible, the chances of change success, and determine what kinds of support may be needed. Research has confirmed that self-assessment readiness tools and readiness frameworks are helpful in decision-making and assist with change adoption (Chen et al., 2023; Gabutti et al., 2023). By identifying the strengths and weaknesses of the change process using this survey ahead of time, a future-focused approach is facilitated, mitigating challenges before they begin. The assessment should also continue during the project, to track the readiness of impacted groups to adopt the changes needed to ensure success.

The result should produce a snapshot of change readiness with minimal effort and inconvenience and help to position the most change-ready individuals in roles of critical importance. While building confidence and resourcefulness in the remaining individuals using strategies already discussed in this study.

7 Conclusion

This study has deconstructed change readiness down to the individual human factors as the starting point for greater understanding. The researcher has explored the individual determinants of change readiness by describing the effect of seven human factors on change readiness. This research confirms a positive relationship between two core human factors and change readiness, namely resourcefulness and confidence. Well-planned change management takes a strategic approach to focus the efforts on the changes that are the most relevant, most valuable, and with the highest likelihood of success. This ensures both individual and organizational change goals can be realised. The individual benefits from reduced change fatigue, clear and transparent communication, and increased input. The organization benefits from an engaged workforce that reaches critical mass quicker and sustains the change in the long term. At the core, the targeted approach to change success is simply understanding the human factors that drive change.

8 Declarations

8.1 Study Limitations

Limitations of this study include the research design, the method, distribution, and sampling. Cross-sectional survey studies are useful in measuring the prevalence of a concept in study participants at the same time. However, since the data is collected at one point in time, it is not possible to determine a causal relationship from cross-sectional data. Surveys are dependent on self-reported data, can be flawed by non-response, and questions may be interpreted differently than intended by the researcher. This research used convenience non-probability sampling methods, meaning, the sample may not represent the entire population and is therefore non-random. Other limitations include selection bias, exclusion of a large percentage of the population, few controls, and generally high nonresponse rate. Lastly, CAPTCHA or human verification mechanisms were not used in this study.

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8.3 Funding Source

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8.4 Competing Interests

The author has no competing interests to declare.

8.5 Informed Consent and Ethics

All participants in this research study provided informed consent and data were collected anonymously. Research ethics review and approval (No. 202184025) for this study were granted by LIGS University, Kuala Lumpur, Malaysia.

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